The Builder.

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Notes, Sanitary and Architectural, in Blackpool, Bangor, Llandudno.

HERE are two aspects under which sea-side watering-places should receive attention in these pages,—the condition sanitarily of those places, and the character in regard to art architectural. The people of London, just now, who have the opportunity, are glad to escape from the offensiveness and pollution of the atmosphere there; and the ordinary residents of the northern towns have filled to overflowing the resorts of Yorkshire and Lancashire, and of the Welsh coast, which is within easy reach of so much that is grand and beautiful in nature, or curious in art and archæology. At another time, we might be disposed to linger on the interest of the Welsh counties. There, the artist finds scenes and prospects innumerable, and each changing to a different picture, every moment of the growing day: the architect may observe this nature's beauty, and feed thereby his power to create the beautiful in his art. The land is strewn with relics of the early British, and later periods; and the castles of the Edwardian time, each differing from the others, are historic and architectural monuments, perhaps not equalled in interest by any structures in our country. To the naturalist, Wales is inexhaustible; and of the interest geologically of Carnarvonshire, it may be sufficient to speak by alluding to the researches of Murchison and Sedgwick, regarding the Silurian and Cambrian systems of rocks, the *strata* lowest of the fossiliferous series, and earliest by countless ages of time, which are cast up in the cloud-capped mountains of this part of the island. The geology, indeed, of the district might detain us for many present reasons.

A second edition of Sir Roderick Murchison's work has appeared recently: the products of the *strata* of North Wales, in one description of building material, are unequalled in value; and we have to return shortly to the subject of the use made of another material from the primary rocks, at Holyhead. Moreover, through observation of the work of nature in the filling up of estuaries, and the recession of the sea, and formation of banks like the Lavan Sands in Beaumaris Bay, light may be thrown into some of the difficult questions of the day, such as the maintenance and the new provision of ports and harbours; and the question, important to London,—to what extent the navigation of a river suffers by embankment, or the reclamation of land in an estuary, as that of the Dee,—a case where, what has been the source of gain to the landowners, it has been often asserted, has been the destruction of the port of Chester. Leaving these points stated merely as indication of what each section of our readers may find to profit from in a district to which our attention has been drawn closely of late,—a district which there are the greatest facilities for seeing, by the tickets issued by the London and North-Western Company, and we may add the reasonableness of hotel charges,—we revert to the more immediate bearings of these notes.

We say that both in the sanitary aspect, and that of art, we should be called upon to watch the progress of such places as are growing up on our coasts. The progress of many of these on the Lancashire coast, and the coast now skirted by the line of the Chester and Holyhead Railway, has been most remarkable. Fleetwood, Blackpool, Lytham, Southport, and Crosby, Waterloo and Bootle, near Liverpool, on the coast of Lancashire; New Brighton and other places on the Mersey; and Parkgate on the Dee; Rhyl, Abergele, Colwyn, and Llandudno in Flintshire and Denbighshire; and Bangor and Beaumaris, are at this time crowded with visitors in search of health and amusement; and it might be important to consider more minutely than present objects and opportunities allow, whether the benefit derived is what might be expected. We may, however, doubt whether we should feel thoroughly satisfied with the condition of many of these places, in either of the points of view which we have set before ourselves. Looking at the matter sanitarily, there may be no evil felt now that should stop the influx of visitors, but there is every necessity for attention on the part of those who may be the authorities at these places. Take the case of Bangor, situated in a deep gorge, between the hills opening from the Menai Strait. Under the local Board of Health, there is an adequate water-supply; and there is a sewer which itself possibly is properly constructed. Though there may have been some cases of small-pox, there has been, we are assured, little cholera or typhus; but in the narrowness of the principal street, and those which lead out of it, in the fact that noxious trades are carried on in the middle of the town, and in the obvious defects of such localities as Kyffin-square in regard to drainage, there is every reason for improvement. It may seem very curious, and some persons might deem the fact opposed to our reasoning, that in one of the worst huts that could be conceived, in the quarter named, at the bottom of a hill, and a spot to which surface drainage flows, there is a healthy-looking mother of a family who has had nearly twenty children; but then the greater number of these died at various ages. It is not the mere statistics, or the first statement of facts, as to such places, that we must look to; but we must apply the same reasoning as we should apply, unprejudiced, to any investigation of truth. It is confessed, that if there be at any time zymotic disease in the town of Bangor, it is to be found about Kyffin-square. The purity of the external air, and the disease-disseminating influences of the habitations in such localities, are working against each other: fortunately, as regards the majority of the houses, the influences of the former kind largely prevail; but the period will arrive when the balance of force will be more nearly equalized, and the condition may arise which has accrued in many villages ordinarily reputed healthy, and which may be even remarkable for longevity of their inhabitants.

There are two matters which more especially have forced themselves on our attention recently. The one is the universal evil of the unsettled question of outfall for sewerage; the other is the deficiency of water-supply where dependant on neighbouring streams. Every artist knows the village of Beddgelert and the Pass of Aberglaslyn; and how the scenery thereabout is usually enhanced by the water falling in miniature cascades, or rushing through the rock-strewn beds of the streams. One of these streams at Beddgelert, is nearly dry: into it the people of the village cast too much of every description of filth, drawing what water they can scoop up from the same source. At the well known inn, "The Goat," otherwise a most agreeable place of sojourn, there is but one want—that of something like pure water to drink, or for purposes of ablution. Everywhere, except at towns like Bangor, having a supply from a distance, the case is the same; and the poor feel it acutely. Anglers visiting Wales have to give up the streams in despair, and trout or other fresh-water fish, at most of the inns, are not to be had. Whether the remarkable lowness of streams, of some years past, is referable to temporary deficiency of rainfall, or whether one or both have been influenced by works of land-drainage, are questions to which instant attention ought to be directed. There are sources which would serve for the supply of large towns, in the Welsh lakes,—for example, the Bala lake, and some which are high up in the mountains: one of them is on Snowdon itself.

The sewerage outfall question, however, is less easily to be got rid of. The engineering practice of the day, in this matter, may be said to end with the collection of all sewerage into one channel, which, if a long channel, may be an evil in itself, or otherwise may have the same effect at the point of outfall. In the sea-side towns, the system of sewerage is now in most cases carried to sea, and below low-water mark. We have suggested ere this, that there might be some necessity for inquiring whether such a system would be sufficient, even assuming the easy emission of sewage from the sewer's mouth. Is not there, however, the tendency in the system at the sea-side, that the sewage will be ponded back, and effluvia made to escape into the town as much as under the existing London system?

At Blackpool, under the local board, the sewage, having been complained of, was lately collected into a channel, and taken to a considerable distance southward, perhaps in the line of an old watercourse; turning at right angles, it has thence to find its way by a "trunk," or wooden constructed and covered channel, to below low-water mark. Many houses, however, have been built lately, opposite to this very point of emission, the locality being, it would seem, rather preferred on account of the distance from the more populous quarter. Any object, therefore, in extra length of sewer, cannot be said to have been answered; procured distance to an outfall, in fact, is a mere staving-off of that question which is eventually to be solved by disinfection and utilization, profitably or not. When the tide at Blackpool is out, the nurses with children in their charge, select the sewer, which is conveniently raised above the wet sand, and from which a perceptible odour arises, for their favourite walk.

There is little else that is evident to the senses about the town of Blackpool, to detract from the reputation which it bears with the people of Lancashire. A fine expanse of sea, with distant views of the Great Orme's Head, the Isle of Man, Walney Isle, and the Cumberland Mountains; good sands and bathing; such comfort and economy in lodgings as are hardly known in the south; a sufficiency of libraries and repositories of fancy goods; and crowds of visitors, are the attractions of the spot—which has no beauty of situation beyond what we have mentioned. The place has, however, a character superior to most watering-places in its general architecture. The houses have slight ornament; but the red brick and stone, the latter the Longridge stone, in the prevalent two storied bow-windows and the door cases, are managed with better result in effect than is the cement of the more common character of sea-side architecture. One or two of the houses, which we believe are due to Liverpool architects, have certainly this superiority.

The Liverpool men, we may say, seem to have much of the work in North Wales in their hands, as well as on the Lancashire and Cheshire coasts. The most striking architectural feature of the Menai Strait, after either of the bridges, is the house on the Anglesea side, nearly opposite Bangor, called Rhianva, built for Sir John Hay Williams, Bart. from the design of Mr. Charles Verelst. It has a Gothic character in the details; but is most remarkable for its general outline, and its grouping with the accessories of landscape and outbuildings, in all which particulars it tells with considerable effect, in spite of some of the *mimicry* of character which we considered objectionable in a case recently spoken of at Holy-

head. The angles of the main building have circular turrets with conical cappings; and an external gallery in the recesses of the front, with the eaves of the roof projecting over it, is contrived in the upper story. The grassy slope extending towards the water-side is a feature of great value to the architecture. Glyn-Garth, on the same shore, is also effective in grouping, and in the landscape; but it is not so satisfactory in detail, as the reputation of its architect, the late John E. Gregan, of Manchester, would have led us to expect. The rest of the recent architecture of the towns in North Wales is too frequently pretentious, and devoid of study in general forms and details. It essays to be Gothic, and commonly also to be castellated. At Conway every late building, from the sometime railway station, or the two or three houses which there are on an eminence near one of the gates, to the police-station now building, mimics the forms of the Plas Mawr,—a building most interesting as a specimen of domestic architecture, but no excuse for copyism in Wales, or anywhere else. The bank of Messrs. Williams and Co. at Bangor, attibuted to Messrs. Hadfield, Weightman, and Goldie, which is in the Elizabethan style, is very superior to other works in the same town. The Anglesea marble is an excellent material for effect, and it can be obtained in very long blocks. A piece of ordinary scantling in the curb of a railing measured 10 feet 9 inches in length. There is, however, a case of the greatest importance before us, where the material has been applied in lintels to too severe tests.

At Llandudno, the reason for the designation beautiful, which is given in advertisements, must be looked for in the scenery, and not in the architecture. The crescent lining the bay, and the building for the baths, built upon the rocks, are not wholly ineffective, from causes which could hardly be missed or counteracted; but the details of the architecture generally, and the cement coatings, are in the worst style of Brighton and other watering places of the south, though in a locality where stone was at hand, and might have been built with in the rough with good result. The baths are the most effective of the buildings; though prospect-towers, which are shown in views of these baths, have yet to be built. Whether the architects, whose names were attached to the general design of the town, which was exhibited in London, are responsible for defects of detail, which are general in the houses and the churches, we should much doubt. Their original design, at least, has been departed from, unless as regards street and building plan; and other architects have been employed; but the defects are such as we are accustomed to in speculative building-work of the south, rather than in much of the modern architecture of the north, in which stone, or brick combined, is made the material for expression.

The town of Llandudno is built on the low land which joins the great Orme's Head to the main land. Thus it is bounded on the south-west by Conway Bay, and on the opposite shore (or we may say north-east of what is, in part, an isthmus) by the fine bay of Llandudno, or Orme's Bay, which sweeps between the Great Orme's Head and the Little Orme's Head. The Great Orme's Head rises to a height of 750 feet above the level of the sea. It has precipitous cliffs, round which there is a narrow walk many feet above the water level, and overhung in some places by the rocks. There are copper mines in the mountain; and there are architectural monuments and antiquarian remains,—the old church of St. Tudno, restored in 1855, under the direction of Mr. Fiddian, of Birmingham, cromlechs, remains of a British fortress, and of Gogarth Abbey; a cavern in which Roman or British articles were found; and another, difficult of access, in which there are what are described as a font and an altar. From the summit, on which is one of the semaphore telegraph stations of the line from Liverpool to Holyhead, is a fine view of Conway and its castle, and Penmaenmawr and other Carnarvonshire mountains, and of other features of the coast, east and west.

A place so favoured by nature and so thronged with visitors should not be wanting in whatever could be supplied by sanitary science, or by art. The site is magnificent: whether looking at the lofty headlands towering above the town, or approaching from the sea, the scene is one of remarkable beauty. The ground, however, on which the town stands, is nearly a dead level; and the drainage outfall question involves here its difficulty. The system which has been adopted from the design of Mr. Macdougall Smith, is described as consisting of a "reservoir main sewer, with collateral drains from the main parade at the Orme's Bay to the Conway Bay, into which they are discharged at about three-quarters ebb tides, when the sewage becomes diluted with a vast body of water, and passes to such a distance down the tidal current as to be carried away beyond any chance of return with the floods. To effect this, advantage is taken of the rise of tides for the flushing the whole system of drainage between the bays, by means of tanks placed at the extremities throughout the length of the esplanade, and filled by the rising tides, and each tank discharged throughout the sewers, when the penstock is raised at the outfalls of the main sewer, thereby giving a head of water from 12 to 15 feet for flushing at each tide, and thus insuring the cleanliness and healthiness of the town."*

This appears to bear date July, 1858. We are not aware whether the entire system described has been carried out; but evidence from our senses would lead us to infer that the existing system is not sufficient.

Returning to Blackpool, whence we have been drawn in the somewhat discursive progress of these notes, we may mention the recent erection there of Viener's Bazaar, in Talbot-road,—Messrs. Hibbert and Rainford, architects,—from whose design was built the chapel at Preston, of which we lately published a general view, and some of the ornamental details—as those of the capitals. In the bazaar, and a house for the proprietor which adjoins it, the effect chiefly is derived from the novelty and the general management of the details, and like most other new whilst successful architectural compositions, does not admit of description in writing, to do justice. We may say, however, that the bazaar has a low front of red brickwork, enriched with encaustic tiles, and three arches with spirally-cut roll-mouldings, rising from shafts with highly-enriched capitals, and from the impost mouldings to broad piers which there are at the angles. In the side arches, there are on pedestals simple tablets for inscriptions; whilst the centre arch spans a wide opening for the doorway. The house is remarkable for the good effect of the simple panelling in the brickwork of the upper story, the stonework to the strings and sills, and the door case, and the slate and iron-work balcony to the first-floor windows. Pressed bricks are used for the facing. The bazaar, a single room, and the house, cost 2,000*l*. Next this bazaar, a new Catholic church has just been completed, from Mr. E. W. Pugin's designs. It is a large building, "Decorated" in character, with a low western tower and transepts; and derives much of its effect from the warmth of its yellow-coloured stone and the crispness in its roughly-dressed masonry. Time did not suffice for us to go through formalities which were necessary to get a sight of the interior; but it was said to be highly enriched.

The principal portion of the town of Blackpool consists of houses in the esplanade, which will shortly extend some miles in distance, and is in part at a considerable height above the sea. This esplanade is much exposed, and the roofing to the houses, throughout of low pitch, is in most cases secured by pieces of stone-paving, to weight it down.

No less important than the question of reclamation of land and subsidence of the sea, is the subject of sea-defences: it is almost impossible to conceive the force of the sea, towards destruction of almost every description of barrier that has been tried on the Lancashire coast. In a great storm, five or six years ago, every sort of defence that had been placed on the line from Fleetwood to Blackpool, was washed down: cramped masonry or concreted blocks; double sheeting of timber and poles, with rammed clay and ties of iron, alike came to ruin; and the sea spread for miles over the land, carrying with it masses of stone great distances, and causing the destruction of some houses. It was impossible to survey the scene of wreck, and the waste of labour and ingenuity, without emotion of awe, and the sense of human littleness. At Blackpool, where in most winters the sea sweeps above the usual limit of high water, drives up the lofty slope, and even enters the houses on the esplanade, a very simple means of defence has been found the best. Posts are driven into the marl, so that only about a foot of the head projects: planks, on edge, are then nailed to the heads of the posts, so as to form the whole surface of the bank into square spaces; and these are then paved with the largest pebbles from the beach. The largest of the stones are placed, on the best foundation that can be obtained, at the foot, which in a few hours may be again covered with sand to a considerable depth. Constant repairs are necessary; but the method of formation admits of the execution of these with great facility. Upright walls, with whatever iron cramps, are considered to have been proved wholly ineffectual. At the time we have spoken of, when the scene of ruin was so remarkable, northward, the defences at Blackpool had either suffered little, or had been quickly re-instated.

The Blackpool Improvement Act of 1853, which is supplementary to general acts of the country, besides provisions as to ruinous buildings, consumption of smoke from furnace-chimneys, and permissively for the conversion of sewage, prohibits the removal of shingle from within 60 yards of the sea-wall without license, or under any circumstances to the injury of the wall. The Local Board, to whom permission is granted to license removal of shingle, have to render account and pay over one-twentieth of the receipts to the Queen, as Duchess of Lancaster. They may require owners or occupiers of premises fronting the wall at certain distances, to effect the repairs in those cases.

Lytham, which is southward, at the mouth of the Ribble, has made considerable advances as a place of resort; but we have had no opportunity of judging of it from inspection.

Fleetwood, northward, at the mouth of the Wyre, has not yet made the advances which were expected. There is excellent frontage to the sea; there are good hotels and baths; packets sail thence to Glasgow, Belfast, the Isle of Man, and the opposite coast of Furness, and the place has advantages as a port. A good building-plan, with the streets radiating to centres, and designed with reference to features of architectural effect, was made some years ago for Sir P. Hesketh Fleetwood, Bart. by Mr. Decimus Burton; and for the best ground fronting the sea, belonging to Mr. James Wheeler, there has been some time prepared a plan and design by Mr. Edward Hall, architect. An extraordinary deadness, however, fell on the town at the end of the railway fever, from which it does not seem to have recovered; any advantages which it has, as an agreeable summer residence, are scantily appreciated: travellers pass through it only; or visitors to Blackpool are content to make to it a day's excursion. Docks have been talked about during late years.

There would be some truth in the assertion, that under circumstances of rest for observation alone, art can be thoroughly appreciated; though there is no value in the illustration of such position, adduced by one writer who has gone into divers relations of the subject. This certainly might be expected, that at the places of resort at this season of the year, subsisting by the resources which they can offer, for health, and bodily and mental relaxation, we should find rather the best art in architecture that could be produced, than as we generally find, the worst, or examples merely of pretentious and tasteless building. In the sanitary point of view however mainly, we call for inquiry into the condition of these places,—even though the present appearances seem to be evidence that the sanitary condition is good. But we spoke not long ago of what we apprehended were defects of the position of New Brighton, near the mouth of the Mersey; we thought from statements at that time made to us, that the place might be subject to disadvantage from the sewage of Liverpool; and more recent information confirms us in the view, and as to other such localities, and, we believe, justifies us in any general warning that we may have here conveyed

* "The Handbook to Llandudno and its Vicinity," by John Hicklin.

THE STRIKE.

WE hear, with regret that words can but inadequately express, that 400 men have struck at Messrs. Trollope's, for the reduction of the day's labour to nine hours. We printed last week the formal demand, for this alteration, which had been addressed to three or four builders. The reply was in the negative, and the men have struck at one of the firms so interrogated!

The following handbill has been circulated:—

"*Nine-Hours Movement.*—Important Notice to the Operatives of the Building Trades.—The master builders having refused to concede the nine hours as a day's work, the Conference of the United Building Trades have been directed by the members of the movement to call upon a firm to cease work: having done so, they now appeal to you to aid them in supporting the men now on strike at Messrs. Trollope and Sons. It is earnestly hoped that no workmen will go in to supplant them till they have gained their object.

'It is expected that every man will do his duty.'

By order of the Executive,
GEO. POTTER, Secretary.

N.B.—Any firm striking for the above object without the sanction of the Conference will not be supported.
The committee sits daily, &c."

Considering how short a time has elapsed since

those connected with the movement indignantly denied that a crisis was approaching or that a strike would be made, the act will surely astonish all.

A meeting of master-builders was held on Wednesday last, at the Freemasons' Tavern, Great Queen-street, and was very numerously attended. The resolution which was come to, *to close all the establishments on the 6th of August*, but meanwhile to appoint a committee to arrange with willing men, will be found in our report of the proceedings.

Most earnestly we pray that the wide-spread ruin in prospect may be averted!

Our opinions on many of the questions under discussion have been often expressed. So long ago as 1848, immediately after the memorable 10th of April, when much excitement prevailed in London, we wrote,—

"We have good reason to believe that we possess the confidence of the thoughtful and intelligent portion of the building operatives, and that they know us to be their earnest friend and warm advocate. They know well that we have ever shown an anxious desire to promote their interests and aid their advancement, and our doings have been but a faint reflex of our feelings. We may risk the loss of this confidence by the assertion which, nevertheless, we are bound to make, that those who prompt them to demand legislative limitation of the hours of labour and the amount of pay; protection against machinery (a long-ago exploded error); and the abolition of the middleman system, all which we find set forth in reports of various meetings of trades' delegates,—are not the friends of the industrial classes. Those who urge them to do this may honestly believe that they are advising rightly, but if so, they act in ignorance, and most earnestly we caution our readers, that they may not hastily commit themselves to a course which would bring increased distress and more widely-spread destruction."

To prevent a man who is his own master from rising early in the morning or working late in the night, when employment is offered him, is manifestly impossible, and, if it were possible, would be unjust and tyrannous. The competition of workmen amongst themselves will not be restrained by the will of the masters or the *dictum* of the legislature. Again,—

"The demand for the suppression of middle-men—of *masters*, in fact,—for, short of this, if the principle be admitted, there is no stopping—equals the last requirement in absurdity. Are intelligence, and skill, and capital—the result of these—to have no reward, and no opportunity of bringing into productive action the labour of less able hands, which, without their intelligence and capital, must remain unproductive? And where are you to stop? If the small master—the sub-contractor—is not to be permitted to come between the workmen and the general contractor, on what ground will the general contractor be permitted to come between the workmen and the employer? As we said before, therefore, the demand is for the abolition of *masters* altogether. Let this be done, and contemplate with calmness, if you can, the inevitable result. It is by means of accumulated capital that all our advances have been made: without it we should fall into a state little superior to that of barbarous nations."

Charles Knight says truly,—"Whatever tends to make the state of society insecure, tends to prevent the employment of capital. In despotic countries that insecurity is produced by the tyranny of one. In other countries, where the people, having been misgoverned, are badly educated, that insecurity is produced by the tyranny of many. In either case, the bulk of the people themselves are the first to suffer, whether by the outrages of a tyrant, or by their own outrages. They prevent labour, by driving away to other channels the funds which support labour." All statesmen agree that the labourer has rights over his labour, which no government, and no individual, and no committee should presume to interfere with. "Natural justice demands," says Lord Brougham, in his "Rights of Industry," "that no labour shall be forced from the labourer, and no rate of payment for that labour be prescribed by statutes or ordinances; that he shall be free to obtain as high wages as he can possibly get," and turn from one employment to another if he think fit.

What becomes of this "freedom of labour," if a man may not work more than a certain number of hours, if he be forbidden from working under a foreman unless that foreman be approved of by others, and prevented from taking "piece-work," by means of which skill and intelligence are enabled to manifest themselves and obtain advantages?

This interference with the freedom of labour (the rights of labour), came in earlier times from the governing powers: men were not allowed to work at trades to which they had not been apprenticed: men were not allowed to take more than a certain number of apprentices—were not allowed at particular periods to work for any but the king. Now, however, the interference is created by the men themselves. To take the words of one of their own class, John Plummer, an operative, of Kettering,—"One of the rights (says he) which I claim for myself and my brethren is, *the absolute freedom of labour in every shape whatsoever*, and I trust I shall be able to prove that no person or persons have the right to take it away from us by any interference on their part."

An interference with the natural laws of supply and demand never was and scarcely can be productive of advantage. A letter in a recent number of the *Melbourne Argus* illustrates this. The writer says,—

"Where high wages arise from the scarcity of labour and a demand for it beyond the supply, then it is a sound and healthy state, and can afford no just cause of complaint. But clearly this is not the case now; we have nominally wages perhaps three times above those of any other country, and yet vast numbers are unemployed. This applies especially to artisans. In some of the representations lately made to the Government, it was stated that not above one-third of the bricklayers and masons could find employment. Common labourers also find the greatest difficulty in obtaining employment, and the bulk about Melbourne and the suburbs do not obtain work above three days in the week. All this is in the face of a thriving and every way prosperous and improving country, increasing its capital rapidly year by year. The truth is, that the nominal price of labour is now far above its real value in the market, and this alone prevents the full employment of every mechanic and labourer that we have. Our resources for the employment of labour are almost inexhaustible; but then there is a maximum price beyond which it will not pay to bring these resources into operation; and until labour is brought below this they will remain dormant and only partially developed. *The natural tendency of things is to find their level, but to do this they must be left to work by themselves, and not to be forced or thwarted by any artificial means.* If supply and demand were left to regulate themselves, the price of labour would find its real value in the market, and all would find employment at that rate. It is evident, therefore, that the combination amongst the mechanics to fix an arbitrary rate of wages, unless regulated by moderation and wisdom, which it is hardly possible to obtain, tends, for a time, to defeat the equitable working of supply and demand. I say for a time, for it cannot long hold out against the natural working of the principle; but in the meantime inconvenience and distress are accumulating, which will at length break up this combination with many aggravating circumstances. I would, therefore, entreat my fellow colonists to be convinced of this truth; and not, by a forced combination, keep the labour market in a false position, but leave each one to act for himself."

The writer goes on to urge that there is much money to invest, and that buildings are wanted; but that at the present price of labour, kept up by artificial means, an adequate return for capital cannot be obtained,—

"Several instances of the injurious working of the present combinations have come under my own observation. Twice I advertised for a gardener, and each time one or two masons applied for the situation, and stated that they were not quite equal to the colonial work, and that the societies would not allow the masters to employ them at lower wages, and therefore they could not work, and must seek other employment. Surely this is a most arbitrary and unnatural state of things."

Earnestly we solicit our readers to think over these matters. The present demand that the day's work shall be confined to nine hours (desirable as it unquestionably is to shorten our hours of labour when we are in a position to afford ourselves the indulgence), involves a principle altogether untenable.

The proposition to prevent joiners and bricklayers from working more than nine hours a-day, "for the purpose" (as set forth by the committee in our pages) "of giving the thousands who are now hungering in unwilling idleness, an opportunity of feeding themselves and families," would not be listened to for a moment if it took the shape of forbidding barristers to accept more than, say, three briefs a week, in order that the briefless might have their share; popular physicians to see more than ten patients a-day, in order that the rest might go elsewhere; or leading architects from superintending more than three buildings at a time, so that the scores of rising Wrens and Wykehams might get back some part of the cost of their education. It would not be listened to, we assert, for an instant, and, moreover, it would do but harm were such a view countenanced.

FALL OF A CHURCH DOME IN RUSSIA.—The central dome of the church of the Trinity, in the large monastery of Jellovski, at Makarew, in Russia, a short time since suddenly fell in with a tremendous crash. Fortunately, no one was in the building at the time. This building dates from 1658.

METROPOLITAN BOARD OF WORKS.

TENDERS FOR THE SOUTHERN HIGH LEVEL SEWER.

AT a meeting of the Board on the 22nd, the following tenders for the Southern High Level Sewer were opened:—George Myers, 242,700*l.*; Wm. Lavers, 229,000*l.*; Wm. Downes, 228,760*l.*; Messrs. Dethick, 223,000*l.*; W. H. Rowe, 218,600*l.*; Wm. Moxon, 217,800*l.*; Thomas Lucas, 217,000*l.*; J. N. Hebling and Co. 217,000*l.*; Wm. Webster, 216,750*l.*

It was announced that the tender of Messrs. J. N. Hebling and Co. was accepted, subject to the usual inquiries.

A report was received from the Works and Improvement Committee, submitting draft bill for the amendment of the Metropolis Local Management Act.

After some discussion, the further consideration of the matter was adjourned for a fortnight, in order to enable the several parishes and districts to pronounce an opinion upon the subject.

Mr. Bazalgette stated that during the week ending Wednesday, the 20th instant, "706 tons of lime and 58 tons of chloride of lime have been converted into milk of lime, and poured continuously day and night into fifty-three of the main sewer outlets, in varying quantities proportionate to the flow of sewage through them, at a cost of 2,412*l.* Up to the present time, 2,109 tons of chalk lime, and 60½ tons of chloride of lime have this summer been mixed with the Thames waters, at a total cost of about 5,440*l.*"

A report from Mr. Miller, and letters from the surgeons to the *Dreadnought* hospital ship, and water-guard, stated that "no injury to the public health can be traced to the effluvia of the river."

MEETING OF MASTER BUILDERS.

IN consequence of the strike of Messrs. Trollope's workmen, for the purpose of limiting the day's work to nine hours, and the publication of a manifesto, declaring, in specific terms, that the conference of the nine-hours movement have ordered the strike, and calling on their brother workmen to use their endeavours to prevent Messrs. Trollope obtaining fresh workmen, a meeting of metropolitan builders was held at Freemason's Tavern, on Wednesday, the 27th instant, "to consider and adopt such measures thereon as may seem expedient." About 500 builders were present.

Mr. Lee was called to the chair, and in taking it, said the meeting was restricted to builders. It was held in consequence of a notice that had been given to four master builders that, unless the hours of labour were reduced to nine per diem, the men would turn out. Those builders had been advised by the trade not to consent, and assured that they would receive the support of the other builders.

Mr. Wales then read a letter signed George Potter, stating the reason why Messrs. Trollope's firm was selected for the first strike, which will be found below.

The Chairman then read the notice which has been circulated by the society, and is printed on another page.

Mr. Piper said it was considered desirable to elicit the opinions of the meeting before any formal resolutions were proposed. There was a peculiarity about the letter read from Mr. Potter, and that was,—the reason given why Trollope's firm was selected *first*. The word "first" evidently implied that it was intended to strike against other firms. He believed there was a large number of the working men who did not sympathise in this movement. It was the duty of the masters to support those men. Was there any one present prepared to support the nine hours' movement? (No, no.) He felt satisfied that they were united in feeling that the movement should be resisted. There was another peculiarity in the workmen's notice addressed to the four builders. They said, "Nine hours a day will meet our present requirements," which indicated ulterior reductions of time. The proposed interference was injurious to the men themselves, as well as to the masters, and as such ought to be resisted. He would suggest that a committee be formed and empowered to take such steps as might seem to them advisable.

Mr. Morris thought it would be well to come to some agreement as to what was to be the basis of their deliberations. It appeared to him that they should resort to something like the old "document," and not employ any man who did not sign a declaration that he did not belong to a society.

Mr. Hunt, an American, said he thought nine hours were quite sufficient for any man to work.

The Chairman inquired if he were an employer of labour in this country.

Mr. Hunt.—No, but I am a builder.

The Chairman.—Whatever you may be pleased to style yourself, if you are not an employer of labour in this country, you have no right to be here.

Mr. Hunt was then forced to leave the room.

Mr. Abbott said it was most desirable, even for the benefit of the men themselves, that they should be released from the trammels imposed on them by the society.

Mr. Lucas called for the immediate closing of every firm until the men gave up their absurd claims and signed the following declaration:—"I do hereby honestly declare that I am neither now,—nor will I, during the continuance of my engagement with my present employers, become,—a member of or support any society which, directly or indirectly, by its rules, meetings, or funds, professes to control, or interfere with, the arrangements or regulations of this or any other establishment, the hours or terms of labour, the agreements of employers or employed, or the qualifications or period of service. I do also further declare that I will not, while in my present employment, call in question the right of any man to follow any honest calling in which he may desire to engage, or of any employer to make what arrangements, and engage what workmen, he pleases, upon whatever terms they choose mutually to agree." This document had been formerly used under similar circumstances, and should be resorted to again. He did not see why a man should not be employed, whether he belonged to the "union" or not.

Mr. Turner thought the "document" calculated to do mischief. He did not approve, either, of closing the shops without due notice to the men. He did not like to see the men taken on the hip. Most of the best workmen belonged to the union. (No, no.) Well, many of them did; and therefore he would not refuse a man employment because he belonged to a society. He altogether disapproved of the nine hours' movement, as contrary to political economy.

Mr. Myers said it was his anxious desire to be on friendly terms with the men, but great difficulties had arisen owing to the conduct of the men, and those difficulties should be met by firm and decisive measures. He thought the best plan would be to give the men reasonable notice. The master had not free action: he was overpowered by numbers: and unless he submitted to their restrictions, they would not work for him themselves, nor permit others to do so. Such a state of things, for the sake of all parties, should be put an end to as speedily as possible.

After some remarks from Mr. Lucas to the same effect,

Mr. Trollope moved: "That the establishments stop work on the 5th of August, and continue so until the men abandon their unjust claims."

Mr. Robinson seconded the motion.

Mr. Dunnage then moved as an amendment: "That the workmen in the employ of Messrs. Trollope and Sons having struck, for the purpose of obtaining the payment of ten hours for nine hours' work; and, it appearing to the meeting that it is the intention of the conference of building trades to order strikes to take place, occasionally, of the men in the employ of other masters; it is resolved that it is the opinion of this meeting, that, in order to combat the movement which has arisen, the metropolitan builders are compelled to close their establishments on Saturday week, the 6th of August; but taking into consideration the great number of men who wholly discountenance trade societies, that a committee of twenty be appointed to consider the best means of opening the doors to such men as may be willing to come to work independent of, and not subject to the dictation of, any trade society interfering with the labour of the working men."

Mr. Piper seconded the amendment.

Sir M. Peto, M.P. who had arrived late, said he would give the amendment his most earnest support. No one could be more desirous than he was to do everything to encourage the intelligent and industrious artizan; but he could not approve of the man usurping the position of the master, or having either of them deprived of their liberty of action by a society which, in his opinion, was the worst of all despotisms. He hoped the master builders, as well as the public, would give those persons the most united and determined resistance. He and his partners had sacrificed from 15,000*l.* to 16,000*l.* in consequence of the strike that took place among the workmen employed on the Houses of Parliament, and he never regretted that sacrifice. He hoped the meeting would unite as one man and do their duty to themselves, the non-society men, and the public. The object of the union was to reduce labour to its minimum, and prevent the master from having a fair day's work for a fair day's pay. The master was entitled to have 1*l.* worth of labour for every pound he paid in wages. If the society men succeeded in the present movement, the difference between ten hours and nine hours labour would cost the public 300,000*l.* a year. The Government and the public were sure to support the masters in resisting the unreasonable demands of the men, and he hoped therefore that by unity of action they would frustrate the efforts of a few designing men, who preferred living by agitation to working with their hands.

The motion was then withdrawn, and the amendment unanimously agreed to, those present afterwards signing a paper in accordance with it.

Thanks were then voted to Mr. Lee, the chairman, and the meeting separated.

The following is a list of the committee appointed:—

Mr. H. D. Austin	Mr. Lucas
„ Arding	Alderman Lawrence
„ G. Bird	Mr. Myers
„ W. Carr	„ Morris
„ S. Cook	„ Mansfield
„ Downes	„ Piper
„ Dunnage	„ G. Smith
„ Ennor	„ Spicer
„ W. Higgs	„ F. Smith
„ Kelk	„ J. Williams.

G. Wales, Secretary.

Sir,—I forward you a copy of a letter transmitted to the meeting of master builders this day, which you will oblige by inserting in your next impression. G. P.

"Paviors' Arms, Johnson-street, Westminster.

"Sir,—As a meeting of the master builders of the metropolis is convened for to-day, to consider the question of the nine hours, I think it right that they should be informed why the firm of Messrs. Trollope and Sons was the first firm selected for the men to cease work,—the reason being that one of the deputation presenting the memorial was discharged on Wednesday last, at a quarter past five p.m. This so irritated the men working at the job that they ceased work the next day without consulting the Conference of the Nine-Hours Movement. When the Conference met on the following Friday to consider which should be the firm selected, the members felt so insulted at Messrs. Trollope's conduct that it was decided, by a very large majority, that the remainder of the men on that firm should be called out for the nine hours per day. You are respectfully requested to read this at the meeting of the master builders this day.—I remain, yours, on behalf of the United Trades,

"GEO. POTTER, Secretary.

"To Mr. Wales, Secretary to Builders' Society."

SIR,—The Notice to Builders in "A. B.'s" letter last week shows that the men know not where to stop; but, if they can force the builders to yield now, they will soon want to have the time reduced still more. They are not content with one hour and a-half on Saturday, but now want five hours more, making in all a reduction of six and a-half hours per week at the present wages of from 5s. to 5s. 6d. per day. Is not this a monstrous demand, when there are a great number of men out of employ? The leaders of this movement well know that many of the leading builders have heavy contracts, and they have commenced to fight them piecemeal, as I understand they are now out on strike of several works. A bricklayer called on me the other day for a job. He had been working for some time at Woolwich Arsenal at 6s. a-day. The men struck there for the nine hours, and he was anxious to get a job anywhere, as he had a wife and family to support. He might get work at any other job, but dared not go on there, as he is a Society man. Can the struggle go on much longer? The builders must rouse themselves or be ruined, and the best course they can pursue is at once to make a stand, and determine not to be trifled with by a few men who are misleading the working classes to serve their own ends. All the men I have spoken to on the subject say they cannot help themselves, and that they are afraid that beggary and ruin are before them in many instances. Let the builders meet publicly and determine their course of action, and if they have only the firmness to act as the builders of London did about the time the new Law Courts at Westminster were built, we should hear no more of strikes for the nine-hours movement for some time to come.

The men struck then, and the builders determined to stop all their public works; and I am informed they did so for a month, when the men were glad to yield; and now I say, if the men strike, and so attempt to *ruin* their employers, the wretchedness and the ruin will fall on their own heads, if the employers will only have the courage to do as has been done before, stop all their works. This is no time for trifling, but the time for action has now come. I am told the trades' unions hold out the threat that they will themselves become contractors. All I can say is, they have a perfect right to do this if they think proper, but they will find there is a great difference between receiving their ready-money every Saturday at four o'clock, and taking contracts with all the risks attendant thereon. I do not believe there is a man amongst them that believes ten hours too much for any man in good health. If the men believe ten hours too much, let them have the nobleness of heart to come forward and assist their suffering brethren in other trades who are compelled to work from twelve to fourteen and fifteen hours daily, while they work only ten. Were they to do this, they would have the credit and the honour of doing a public good, instead of a public injury.

OCTAVIUS.

P.S.—I never found ten hours too much when I worked at the bench.

SIR,—Now is the day and now is the hour! The builders of London have passed at their meeting to-day (Wednesday) (attended by more than 500 masters) very strong resolutions to combat the workmen, and to endeavour to break up the despotism of the secret conclave which can order strikes, and *raise money* to enforce them, in the most cowardly manner, against any master they may choose to select. Where is the boasted freedom of Englishmen, when such documents as the manifesto issued by the executive of the Nine-hours Movement can be unblushingly put forward? Doubtless you have seen this document, but in case you have not, I enclose one, and I hope you will print it conspicuously in this week's number of the *Builder*, in order that all engaged in the trade may be fully informed. The masters want only that which is fair, and their resolutions of this day support this assertion unequivocally. A BUILDER.

AN OPERATIVE'S REPLY ON THE LABOUR QUESTION.*

THE writer of this "Reply" complains, in the outset, that it has been supposed he is not an operative, whereas, as he states, he really is one, and with not over plentiful leisure time for literary efforts either.

While acknowledging the ability shown in the composition of the Prize Essay, he regrets that it should be based on a false and erroneous principle, namely, that capital is *not* the friend of labour. This, though not positively asserted in direct terms, he observes, is the pervading principle of the essay.

The reply, he goes on to say, will be divided into four parts:—

"The FIRST will consist of some observations on Mr. Daniel's pamphlet; the SECOND will assert the principle that *the Nine Hours movement is both impolitic and unnecessary at the present time;* the THIRD, that *a Strike will not effect the objects desired;* and the FOURTH will treat of *the true principles by which the elevation of the working classes may be secured.* To do so calmly and dispassionately is the aim of the writer, and he entreats of his fellow-toilers the privilege, if not the right, of a fair hearing, that he may utter that which experience has shown him to be alone the *true* policy to be followed, if his fellow-toilers really desire to obtain the realization of their professed wishes."

As to the necessity of the nine-hours movement at present, the writer admits what is stated by Mr. Daniel, in the prize essay, that a large proportion of preventible deaths arise "from premature exhaustion of the physical powers induced by the long hours of labour, and from the injurious nature of the trades themselves;" but the statement, he asserts, "applies more to the overworked seamstresses, tailors, and similar professions, rather than to the bricklayer, carpenter, or mason, who work for ten hours in the open air, instead of being cooped up in a close, ill-ventilated, hot, and gas-lit room for *fourteen, fifteen,* or even *sixteen* hours!"

A man who possesses a *real* desire to improve his intellectual powers, he is of opinion, "*will* do so in spite of every disadvantage; and experience," he continues, "teaches us that those who are the most clamorous for a real or alleged benefit are very often those who care the least for its possession. Depend upon it, the really intelligent and proficient operatives of the building trades are fully aware that the agitation for the nine-hours movement will not, or at least will but slightly, *increase* their chances of self-improvement, while it may possibly *lessen* them by convulsing the trade, and producing bitter feelings of discontent between the employers and the employed. Of course it would be advantageous to the operative employed in the building trades, that he should be competent to understand the various manuals and works relating to his profession; but how does his inability to do so really arise? Let Mr. Daniel inquire into the history of the greater portion of his fellow-toilers, and he will find it to arise more from the neglect and cupidity of parents, than from any other cause."

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* Dedicated to the Members of the London Building Trades: Reduction of the Hours of Labour, as proposed by the Nine Hours' Movement: a Reply to the Prize Essay of the United Building Trades; with Remarks on Strikes. By John Plummer, the Kettering Factory Operative. London: W. Tweedie, 1859.

As to the assertion that the reduction of the hours of labour to nine will afford employment to those who are unemployed, the "Operative" says, "This at first sight appears very plausible, but upon examination it will be found not to be based upon the true principles of political economy. There may probably be 60,000 skilled labourers employed in the London building trades alone, leaving out the unskilled labourers. At present these work ten hours per day for five days in the week, and eight and a-half hours on Saturdays, as they leave work at four o'clock. These *ten* hours, [on the first five days of the week, they desire should be reduced to *nine:* at the same time, however, they require that the rate of wages should remain the same, or, in other words, that *ten hours' pay should be given for nine hours' labour!* So that, in fact, the real aim of the agitation is to procure a higher rate of wages. Of course the men have an undoubted right to use every fair means to attain their object, but their employers have also the right of showing that the demand is unreasonable. The loss of 60,000 *hours per day* will amount to 300,000 *hours per week:* this would necessitate the employment of many more hands, but it would also increase the cost of building, and thus tend to diminish the demand, consequently to reduce the number of labourers required; so that, ultimately, the men would find themselves in a worse positition than at first! The cheaper things can be produced, the greater will be the demand for them, and consequently the more will be the number of labourers required; but, when the price *rises*, the demand will fall, and less labourers will be required."

In the course of his remarks in support of the position that a strike will not effect the objects desired, the writer says:—

"Of all means used by working men to attain any desired end, strikes are among the most useless, for if they injure the employer, they affect the employed still more.

This is the history of nearly all strikes; and if the artisans employed in the building trades do not wish to injure their interests, they will sternly set their faces against a 'strike.' True, the leaders attempt to show the certain success of such a measure, but, on perusing their speeches, we find the same expressions which have been used a thousand times before, and with the same results—stern denunciations of the tyranny of employers; fervid exhortations to resistance; predictions of certain success; followed by the ultimate falsification of every hope and prospect held out by the ignorant leaders to their poor deluded followers."

"If I could perceive that the slightest good to the operatives would arise from the contemplated strike, I would as firmly advocate it as I now sternly denounce it. I know this language is not popular, but

> 'Oh, my brothers, to me listen,
> Ere the sorrow and the tears
> Cause each sunken eye to glisten
> With the grief of after years;
> Ere the wretched mothers, weeping,
> Sob as though their hearts would break,
> For their infant darlings sleeping,
> And their thoughtless husbands' sake;
> Ere ye tramp on lonely highways,
> In the village or the town,
> Or in city's crowded byways,
> Sadly wander up and down;
> For employment ever seeking,
> When there's none, alas! to give;
> Till the hunger glance is speaking,
> That ye scarce know how to live.'

The employers would probably agree to the proposed reduction if the men would work by the piece, or consent to a proportionate reduction of wages. I suspect the latter is out of the question, as the majority of operatives would most likely rather work the ten hours than lose the pay for the spare hour, therefore we must consider the question of *piece-work*.

This brings us to the second question. *Is the time-work principle advantageous to the operative?* To this I can safely answer, 'No;' for it tends to bring down the skilled labourer to the level of the unskilled; and to cause the clever and industrious workman to be hampered with the cumbrous efforts of the more stolid and indolent of his class. * * * * * *

I can gain far more by piece-work, providing there be sufficient employment, than I can by time-work; and I have invariably found that the most clever, industrious, skilled, intelligent, and well-to-do working men were those who, as a rule, worked by the piece. Consequently, the objections urged against piece-work are rendered harmless, and they only show the real spirit which animates but too many of those who would fain drive their more sensible and quiet brethren into the destroying vortex of a strike. Well has Miss Martineau shown the facilities afforded by strikes 'for meddling and governing, for rioting, for idling, and tippling, and journeying, and speechifying at other people's expense. No better occasion could be devised for exposing the simple, and timid, and unwary to be robbed, and jobbed, and made tools of by a few sharpers and idle busy-bodies. It is very certain that three or four individuals have often succeeded, for their own purposes, in setting three or four hundred, or thousand, better men than themselves at enmity with their masters.' If the building operatives really desire a little more time for the purposes of health, physical and intellectual recreation, and the like, they would not hesitate to adopt the piece-work system; but their refusal to do so, and their threat of a strike, inform us plainly enough that such is not their real aim."

In conclusion, and while pointing out the true principles by which the elevation of the working man may be secured, the Kettering Operative insists that "these are temperance, economy, religion, education, prudence, and similar virtues. To preach these may not be so interesting as the delivery of a fierce denunciation of employers as tyrants; but it is far easier to destroy the welfare of a people than to elevate their condition. If ever we are to rise from the bondage in which we are asserted to be, it will only be by our own efforts, aided by that amount of self-reform which is indispensable to true and permanent success. An ignorant, a drunken, or an immoral people may become the slaves of the oppressor; but a free, enlightened, and self-enfranchised nature NEVER! Let us cut out the cancer of intemperance which consumes us: let us *dash aside our class prejudices*, and learn to look without envy on the success of our more fortunate brethren; let us learn to behold, without hatred in our hearts, the efforts made by those of lofty station to aid us in improving our condition; let us despise the false, cruel, and mischievous theories of popularity-seeking demagogues, and, rely on it, a better time will dawn for our class.

The principles which regulate capital and labour, and the condition of our lives, are at present only imperfectly understood by those the most concerned; but perhaps these few words of mine may lead some to investigate for themselves these things; and it may be that they will learn to think of me not as an enemy to the cause of his fellow-toilers, but as one who sought to lead his brothers from the false path on which they were proceeding, and to avert from themselves and their families the heart-rending anguish and bitter misery entailed by a strike."

THE WORK OF IRON, IN NATURE, ART, AND POLICY.*

WHEN I venture to speak about my own special business of art, it is almost always before students of art, among whom I may sometimes permit myself to be dull, if I can feel that I am useful: but a mere talk about art, especially without examples to refer to (and I have been unable to prepare any careful illustrations for this lecture), is seldom of much interest to a general audience. As I was considering what you might best bear with me in speaking about, there came naturally into my mind a subject connected with the origin and present prosperity of the town you live in; and, it seemed to me, in the out-branchings of it, capable of a very general interest. When, long ago (I am afraid to think how long), Tunbridge Wells was my Switzerland, and I used to be brought down here in the summer, a sufficiently active child, rejoicing in the hope of clambering sandstone cliffs of stupendous height above the common, there used sometimes, as, I suppose, there are in the lives of all children at the Wells, to be dark days in my life—days of condemnation to the pantiles and band—under which calamities my only consolation used to be in watching, at every turn in my walk, the welling forth of the spring over the orange rim of its marble basin. The memory of the clear water, sparkling over its saffron stain came back to me as the strongest image connected with the place; and it struck me that you might not be unwilling, to-night, to think a little over the full significance of that saffron stain, and of the power, in other ways and other functions, of the steelly element to which so many here owe returning strength and life;—chief as it has been always, and is yet more and more markedly so day by day, among the precious gifts of the earth. The subject is, of course, too wide to be more than suggestively treated; and even my suggestions must be few, and drawn chiefly from my own fields of work; nevertheless, I think I shall have time to indicate some courses of thought which you may afterwards follow out for yourselves if they interest you; and so I will not shrink from the full scope of the subject which I have announced to you—the functions of Iron, in Nature, Art, and Policy. Without more preface, I will take up the first head.

I. IRON IN NATURE.—You all probably know that the ochreous stain, which, perhaps, is often thought to spoil the basin of your spring, is iron in a state of rust; and when you see rusty iron in other places, you generally think not only that it spoils the places it stains, but that it is spoiled itself—that rusty iron is spoiled iron.

For most of our uses it generally is so; and because we cannot use a rusty knife or razor so well as a polished one, we suppose it to be a great defect in iron that is subject to rust. But not at all. On the contrary, the most perfect and useful state of it is that ochreous stain; and therefore it is endowed with so ready a disposition to get itself into that state. It is not a fault in the iron, but a virtue, to be so fond of getting rusted, for in that condition it fulfils its most important functions in the universe, and most kindly duties to mankind. Nay, in a certain sense, and almost a literal one, we may say that iron rusted is Living; but when pure or polished, Dead. You all probably know that in the mixed air we breathe, the part of it essentially needful to us is called oxygen; and that this substance is to all animals, in the most accurate sense of the word, "breath of life." The nervous power of life is a different thing; but the supporting element of the breath, without which the blood, and therefore the life, cannot be nourished, is this oxygen. Now it is this very same air which the iron breathes when it gets rusty. It takes the oxygen from the atmosphere as eagerly as we do, though it uses it differently. The iron keeps all that it gets; we, and other animals, part with it again; but the metal absolutely keeps what it has once received of this aerial gift; and the ochreous dust which we so much despise is, in fact, just so much nobler than pure iron, in so far as it is *iron and the air*. Nobler, and more useful—for, indeed, as I shall be able to show you presently, the main service of this metal, and of all other metals, to us, is not in making knives, and scissors, and pokers, and pans, but in making the ground we feed from, and nearly all the substances first needful to our existence. For these are all nothing but metals and oxygen—metals with breath put into them. Sand, lime, clay, and the rest of the earths—potash and soda, and the rest of the alkalies—are all of them metals which have undergone this, so to speak, vital change, and have been rendered fit for the service of man by permanent unity with the purest air which he himself breathes. There is only one metal which does not rust readily; and that, in its influence on man hitherto, has caused death rather than life; it will not be put to its right use till it is made a pavement of, and so trodden under foot.

Is there not something striking in this fact, considered largely as one of the types, or lessons, furnished by the inanimate creation? Here you have your hard, bright, cold, lifeless metal—good enough for swords and scissors—but not for food. You think, perhaps, that your iron is wonderfully useful in a pure form, but how would you like the world, if all your meadows, instead of grass, grew nothing but iron wire—if all your arable ground, instead of being made of sand and clay, were suddenly turned into flat surfaces of steel—if the whole earth, instead of its green and glowing sphere, rich with forest and flower, showed nothing but the image of the vast furnace of a ghastly engine — a globe of black, lifeless, excoriated metal? It would be that,—probably it was once that; but assuredly it would be, were it not that all the substance of which it is made sucks and breathes the brilliancy of the atmosphere; and, as it breathes, softening from its merciless hardness, it falls into fruitful and beneficent dust; gathering itself again into the earths from which we feed; and the stones with which we build;—into the rocks that frame the mountains, and the sands that bind the sea. Hence, it is impossible for you to take up the most insignificant pebble at your feet, without being able to read, if you like, this curious lesson in it. You look upon it at first as if it were earth only. Nay, it answers, "I am not earth—I am earth and air in one; part of that blue heaven which you love, and long for, is already in me; it is all my life—without it I should be nothing, and able for nothing; I could not minister to you, nor nourish you—I should be

* From "The Two Paths," by John Ruskin, M.A.

a cruel and helpless thing; but, because there is, according to my need and place in creation, a kind of soul in me, I have become capable of good, and helpful in the circles of vitality."

In these days of swift locomotion I may doubtless assume that most of my audience have been somewhere out of England—have been in Scotland, or France, or Switzerland. Whatever may have been their impression, on returning to their own country, of its superiority or inferiority in other respects, they cannot but have felt one thing about it—the comfortable look of its towns and villages. Foreign towns are often very picturesque, very beautiful, but they never have quite that look of warm self-sufficiency and wholesome quiet with which our villages nestle themselves down among the green fields. If you will take the trouble to examine into the sources of this impression, you will find that by far the greater part of that warm and satisfactory appearance depends upon the rich scarlet colour of the bricks and tiles. It does not belong to the neat building—very neat building has an uncomfortable rather than a comfortable look—but it depends on the *warm* building; our villages are dressed in red tiles as our old women are in red cloaks; and it does not matter how worn the cloaks, or how bent and bowed the roof may be, so long as there are no holes in either one or the other, and the sobered but unextinguishable colour still glows in the shadow of the hood, and burns among the green mosses of the gable. And what do you suppose dyes your tiles of cottage roof? You don't paint them. It is nature who puts all that lovely vermilion into the clay for you; and all that lovely vermilion is this oxide of iron. Think, therefore, what your streets of towns would become—ugly enough, indeed, already, some of them, but still comfortable-looking — if instead of that warm brick red, the houses became all pepper-and-salt colour. Fancy your country villages changing from that homely scarlet of theirs which, in its sweet suggestion of laborious peace, is as honourable as the soldiers' scarlet of laborious battle—suppose all those cottage roofs, I say, turned at once into the colour of unbaked clay, the colour of street gutters in rainy weather. That's what they would be, without iron.

There is, however, yet another effect of colour in our English country towns which, perhaps, you may not all yourselves have noticed, but for which you must take the word of a sketcher. They are not so often merely warm scarlet as they are warm purple;—a more beautiful colour still: and they owe this colour to a mingling with the vermilion of the deep grayish or purple hue of our fine Welsh slates on the more respectable roofs, made more blue still by the colour of intervening atmosphere. If you examine one of these Welsh slates freshly broken, you will find its purple colour clear and vivid; and although never strikingly so after it has been long exposed to weather, it always retains enough of the tint to give rich harmonies of distant purple in opposition to the green of our woods and fields. Whatever brightness or power there is in the hue is entirely owing to the oxide of iron. Without it the slates would either be pale stone colour, or cold gray, or black.

Thus far we have only been considering the use and pleasantness of iron in the common earth of clay. But there are three kinds of earth which in mixed mass and prevalent quantity form the world. Those are, in common language, the earths of clay, of lime, and of flint. Many other elements are mingled with these in sparing quantities; but the great frame and substance of the earth is made of these three, so that wherever you stand on solid ground, in any country of the globe, the thing that is mainly under your feet will be either clay, limestone, or some condition of the earth of flint, mingled with both.

These being what we have usually to deal with, Nature seems to have set herself to make these three substances as interesting to us, and as beautiful for us, as she can. The clay, being a soft and changeable substance, she doesn't take much pains about, as we have seen, till it is baked; she brings the colour into it only when it receives a permanent form. But the limestone and flint she paints, in her own way, in their native state; and her object in painting them seems to be much the same as in her painting of flowers; to draw us, careless and idle human creatures, to watch her a little, and see what she is about—that being, on the whole, good for us—her children. For Nature is always carrying on very strange work with this limestone and flint of hers—laying down beds of them at the bottom of the sea; building islands out of the sea; filling chinks and veins in mountains with curious treasures; petrifying mosses, and trees, and shells; in fact, carrying on all sorts of business, subterranean or submarine, which it would be highly desirable for us, who profit and live by it, to notice as it goes on. And apparently to lead us to do this, she makes picture-books for us of limestone and flint; and tempts us, like foolish children as we are, to read her books by the pretty colours in them. The pretty colours in her limestone-books form those variegated marbles which all mankind have taken delight to polish and build with from the beginning of time; and the pretty colours in her flint-books form those agates, jaspers, cornelians, bloodstones, onyxes, cairngorms, chrysoprases, which men have in like manner taken delight to cut, and polish, and make ornaments, from the beginning of time; and yet, so much of babies are they, and so fond of looking at the pictures instead of reading the book, that I question whether, after six thousand years of cutting and polishing, there are above two or three people out of any given hundred, who know, or care to know, how a bit of agate or a bit of marble was made, or painted. How it was made, may not be always very easy to say; but with what it was painted there is no manner of question. All those beautiful violet veinings and variegations of the marbles of Sicily and Spain, the glowing orange and amber colours of those of Siena, the deep russet of the Rosso antico, and the blood-colour of all the precious jaspers that enrich the temples of Italy; and, finally, all the lovely transitions of tint in the pebbles of Scotland and the Rhine, which form, though not the most precious, by far the most interesting portion of our modern jewellers' work;—all these are painted by nature with this one material only, variously proportioned and applied—the oxide of iron that stains your Tunbridge springs.

But this is not all, nor the best part of the work of iron. Its service in producing these beautiful stones is only rendered to rich people, who can afford to quarry and polish them. But Nature paints for all the world, poor and rich together; and while, therefore, she thus adorns the innermost rocks of her hills, to tempt your investigation, or indulge your luxury,—she paints, far more carefully, the outsides of the hills, which are for the eyes of the shepherd and the ploughman. I spoke just now of the effect in the roofs of our villages of their purple slates; but if the slates are beautiful even in their flat and formal rows on house-roofs, much more are they beautiful on the rugged crests and flanks of their native mountains. Have you ever considered, in speaking as we do so often of distant blue hills, what it is that makes them blue? To a certain extent it is distance; but distance alone will not do it. Many hills look white, however distant. That lovely dark purple colour of our Welsh and Highland hills is owing, not to their distance merely, but to their rocks. Some of their rocks are, indeed, too dark to be beautiful, being black or ashy grey; owing to imperfect and porous structure. But when you see this dark colour dashed with russet and blue, and coming out in masses among the green ferns, so purple that you can hardly tell at first whether it is rock or heather, then you must thank your old Tunbridge friend, the oxide of iron.

But this is not all. It is necessary for the beauty of hill scenery that Nature should colour not only her soft rocks, but her hard ones; and she colours them with the same thing, only more beautifully. Perhaps you have wondered at my use of the word "purple," so often of stones; but the Greeks, and still more the Romans, who had profound respect for purple, used it of stone long ago. You have all heard of "porphyry" as among the most precious of the harder massive stones. The colour which gave it that noble name, as well as that which gives the flush to all the rosy granite of Egypt—yes, and to the rosiest summits of the Alps themselves—is still owing to the same substance—your humble oxide of iron.

And last of all:

A nobler colour than all these—the noblest colour ever seen on this earth—one which belongs to a strength greater than that of the Egyptian granite, and to a beauty greater than that of the sunset or the rose—is still mysteriously connected with the presence of this dark iron. I believe it is not ascertained on what the crimson of blood actually depends; but the colour is connected, of course, with its vitality, and that vitality with the existence of iron as one of its substantial elements.

Is it not strange to find this stern and strong metal mingled so delicately in our human life, that we cannot even blush without its help? Think of it, my fair and gentle hearers; how terrible the alternative—sometimes you have actually no choice but to be brazen-faced, or iron-faced!

In this slight review of some of the functions of the metal, you observe that I confine myself strictly to its operations as a colouring element. I should only confuse your conception of the facts, if I endeavoured to describe its uses as a substantial element, either in strengthening rocks, or influencing vegetation by the decomposition of rocks. I have not, therefore, even glanced at any of the more serious uses of the metal in the economy of nature. But what I wish you to carry clearly away with you is the remembrance that in all these uses the metal would be nothing without the air. The pure metal has no power, and never occurs in nature at all, except in meteoric stones, whose fall no one can account for, and which are useless after they have fallen: in the necessary work of the world, the iron is invariably joined with the oxygen, and would be of no service or beauty whatever without it.

Iron in Art.—Passing from the offices of the metal in the operations of nature to its uses in the hands of man, you must remember, in the outset, that the type which has been thus given you, by the lifeless metal, of the action of body and soul together, has noble antitype in the operation of all human power. All art worthy the name is the energy—neither of the human body alone, nor of the human soul alone, but of both united, one guiding the other: good craftmanship and work of the fingers, joined with good emotion and work of the heart.

There is no good art, nor possible judgment of art, when these two are not united; yet we are constantly trying to separate them. Our amateurs cannot be persuaded but that they may produce some kind of art by their fancy or sensibility, without going through the necessary manual toil. That is entirely hopeless. Without a certain number, and that a very great number, of steady acts of hand—a practice as careful and constant as would be necessary to learn any other manual business—no drawing is possible. On the other side, the workman, and those who employ him, are continually trying to produce art by trick or habit of fingers, without using their fancy or sensibility. That, also, is hopeless. Without mingling of heart-passion with hand-power, no art is possible. The highest art unites both in their intensest degrees; the action of the hand at its finest, with that of the heart at its fullest.

Hence it follows that the utmost power of art can only be given in a material capable of receiving and retaining the influence of the subtlest touch of the human hand. That hand is the most perfect agent of material power existing in the universe; and its full subtlety can only be shown when the material it works on, or with, is entirely yielding. The chords of a perfect instrument will receive it, but not of an imperfect one; the softly-bending point of the hair pencil, and soft melting of colour, will receive it, but not even the chalk or pen point, still less the steel point, chisel, or marble. The hand of a sculptor may, indeed, be as subtle as that of a painter, but all its subtlety is not bestowable nor expressible: the touch of Titian, Correggio, or Turner, is a far more marvellous piece of nervous action than can be shown in anything but colour, or in the very highest conditions of executive expression in music. In proportion as the material worked upon is less delicate, the execution necessarily becomes lower, and the art with it. This is one main principle of all work. Another is, that whatever the material you choose to work with, your art is base if it does not bring out the distinctive qualities of that material.

The reason of this second law is, that if you don't want the qualities of the substance you use, you ought to use some other substance: it can be only affectation, and desire to display your skill that lead you to employ a refractory substance, and therefore your art will all be base. Glass, for instance, is eminently, in its nature, transparent. If you don't want transparency, let the glass alone. Do not try to make a window look like an opaque picture, but take an opaque ground to begin with. Again, marble is eminently a solid and massive substance. Unless you want mass and solidity, don't work in marble. If you wish for lightness, take wood; if for freedom, take stucco; if for ductility, take glass. Don't try to carve feathers, or trees, or nets, or foam, out of marble. Carve white limbs and broad breasts only out of that.

So again, iron is eminently a ductile and tenacious substance—tenacious above all things, ductile more than most. When you want tenacity, therefore, and involved form, take iron. It is emi-

nently made for that. It is the material given to the sculptor as the companion of marble, with a message, as plain as it can well be spoken, from the lips of the earth-mother, "Here's for you to cut, and here's for you to hammer. Shape this, and twist that. What is solid and simple, carve out; what is thin and entangled, beat out. I give you all kinds of forms to be delighted in;—fluttering leaves as well as fair bodies; twisted branches as well as open brows. The leaf and the branch you may beat and drag into their imagery: the body and brow you shall reverently touch into their imagery. And if you choose rightly and work rightly, what you do shall be safe afterwards. Your slender leaves shall not break off in my tenacious iron, though they may be rusted a little with an iron autumn. Your broad surfaces shall not be unsmoothed in my pure crystalline marble—no decay shall touch them. But if you carve in the marble what will break with a touch, or mould in the metal what a stain of rust or verdigris will spoil, it is your fault—not mine."

These are the main principles in this matter; which, like nearly all other right principles in art, we moderns delight in contradicting as directly and specially as may be. We continually look for, and praise, in our exhibitions, the sculpture of veils, and lace, and thin leaves, and all kinds of impossible things pushed as far as possible in the fragile stone, for the sake of showing the sculptor's dexterity.* On the other hand, we *cast* our iron into bars—brittle, though an inch thick—sharpen them at the ends, and consider fences, and other work, made of such materials, decorative! I do not believe it would be easy to calculate the amount of mischief done to our taste in England by that fence ironwork of ours alone. If it were asked of us, by a single characteristic, to distinguish the dwellings of a country into two broad sections; and to set, on one side, the places where people were, for the most part, simple, happy, benevolent, and honest; and, on the other side, the places where at least a great number of the people were sophisticated, unkind, uncomfortable, and unprincipled, there is, I think, one feature that you could fix upon as a positive test: the uncomfortable and unprincipled parts of a country would be the parts where people lived among iron railings, and the comfortable and principled parts where they had none. A broad generalization, you will say! Perhaps a little too broad; yet, in all sobriety, it will come truer than you think. Consider every other kind of fence or defence, and you will find some virtue in it; but in the iron railing none. There is, first, your castle rampart of stone—somewhat too grand to be considered here among our types of fencing; next, your garden or park wall of brick, which has indeed often an unkind look on the outside, but there is more modesty in it than unkindness. It generally means, not that the builder of it wants to shut you out from the view of his garden, but from the view of himself: it is a frank statement that as he needs a certain portion of time to himself, so he needs a certain portion of ground to himself, and must not be stared at when he digs there in his shirt-sleeves, or plays at leapfrog with his boys from school, or talks over old times with his wife, walking up and down in the evening sunshine. Besides, the brick wall has good practical service in it, and shelters you from the east wind, and ripens your peaches and nectarines, and glows in autumn like a sunny bank. And, moreover, your brick wall, if you build it properly, so that it shall stand long enough, is a beautiful thing when it is old, and has assumed its grave purple red, touched with mossy green.

Next to your lordly wall, in dignity of enclosure, comes your close-set wooden paling, which is more objectionable, because it commonly means enclosure on a larger scale than people want. Still it is significative of pleasant parks, and well-kept field walks, and herds of deer, and other such aristocratic pastoralisms, which have here and there their proper place in a country, and may be passed without any discredit.

Next to your paling, comes your low stone dyke, your mountain fence, indicative at a glance either of wild hill country, or of beds of stone beneath the soil; the hedge of the mountains—delightful in all its associations, and yet more in the varied and craggy forms of the loose stones it is built of; and next to the low stone wall, your lowland hedge, either in trim line of massive green, suggestive of the pleasances of old Elizabethan houses, and smooth alleys for aged feet, and quaint labyrinths for young ones, or else in fair entanglement of eglantine and virgin's bower, tossing its scented luxuriance along our country waysides:—how many such you have here among your pretty hills, fruitful with black clusters of the bramble for boys in autumn, and crimson hawthorn-berries for birds in winter. And then last, and most difficult to class among fences, comes your handrail, expressive of all sorts of things; sometimes having a knowing and vicious look, which it learns at race-courses; sometimes an innocent and tender look, which it learns at rustic bridges over cressy brooks; and sometimes a prudent and protective look, which it learns on passes of the Alps, where it has posts of granite and bars of pine, and guards the brows of cliffs and the banks of torrents. So that in all these kinds of defence there is some good, pleasant, or noble meaning. But what meaning has the iron railing? Either, observe, that you are living in the midst of such bad characters that you must keep them out by main force of bar, or that you are yourself of a character requiring to be kept inside in the same manner. Your iron railing always means thieves outside, or Bedlam inside;—it *can* mean nothing else than that. If the people outside were good for anything, a hint in the way of fence would be enough for them; but because they are violent and at enmity with you, you are forced to put the close bars and the spikes at the top. Last summer I was lodging for a little while in a cottage in the country, and in front of my low window there were, first, some beds of daisies, then a row of gooseberry and currant bushes, and then a low wall about 3 feet above the ground, covered with stone-cress. Outside, a corn-field, with its green ears glistening in the sun, and a field path through it, just past the garden gate. From my window I could see every peasant of the village who passed that way, with basket on arm for market, or spade on shoulder for field. When I was inclined for society, I could lean over my wall, and talk to anybody; when I was inclined for science, I could botanize all along the top of my wall—there were four species of stone-cress alone growing on it; and when I was inclined for exercise, I could jump over my wall, backwards and forwards. That's the sort of fence to have in a Christian country; not a thing which you can't walk inside of without making yourself look like a wild beast, nor look at out of your window in the morning without expecting to see somebody impaled upon it in the night.

And yet farther, observe that the iron railing is a useless fence—it can shelter nothing, and support nothing; you can't nail your peaches to it, nor protect your flowers with it, nor make anything whatever out of its costly tyranny; and besides being useless, it is an insolent fence;—it says plainly to everybody who passes—"You may be an honest person—but, also, you may be a thief: honest or not, you shall not get in here, for I am a respectable person, and much above you; you shall only see what a grand place I have got to keep you out of—look here, and depart in humiliation."

This, however, being in the present state of civilization a frequent manner of discourse, and there being unfortunately many districts where the iron railing is unavoidable, it yet remains a question whether you need absolutely make it ugly, no less than significative of evil. You must have railings round your squares in London, and at the sides of your areas; but need you therefore have railings so ugly that the constant sight of them is enough to neutralise the effect of all the schools of art in the kingdom? You need not. Far from such necessity, it is even in your power to turn all your police force of iron bars actually into drawing masters, and natural historians. Not, of course, without some trouble and some expense; you can do nothing much worth doing, in this world, without trouble, you can get nothing much worth having, without expense. The main question is only—what is worth doing and having:—Consider, therefore, if this be not. Here is your iron railing, as yet, an uneducated monster; a sombre seneschal, incapable of any words, except his perpetual "Keep out!" and "Away with you!" Would it not be worth some trouble and cost to turn this ungainly ruffian porter into a well-educated servant; who, while he was severe as ever in forbidding entrance to evilly-disposed people, should yet have a kind word for well-disposed people, and a pleasant look, and a little useful information at his command, in case he should be asked a question by the passers-by?

We have not time to look at many examples of ironwork; and those I happen to have by me are not the best: ironwork is not one of my special subjects of study; so that I only have memoranda of bits that happened to come into picturesque subjects which I was drawing for other reasons. Besides, external ironwork is more difficult to find good than any other sort of ancient art; for when it gets rusty and broken, people are sure, if they can afford it, to send it to the old iron shop, and get a fine new grating instead; and in the great cities of Italy, the old iron is thus nearly all gone: the best bits I remember in the open air were at Brescia;—fantastic sprays of laurel-like foliage rising over the garden gates; and there are a few fine fragments at Verona, and some good trellis-work enclosing the Scala tombs; but on the whole, the most interesting pieces, though by no means the purest in style, are to be found in out-of-the-way provincial towns, where people do not care, or are unable, to make polite alterations. The little town of Bellinzona, for instance, on the south of the Alps, and that of Sion on the north, have both of them complete schools of ironwork in their balconies and vineyard gates. That of Bellinzona is the best, though not very old—I suppose most of it of the seventeenth century; still it is very quaint and beautiful.

The common forms of Swiss ironwork are less naturalistic than the Italian balconies, depending more on beautiful arrangements of various curve; nevertheless, there has been a rich naturalist school at Fribourg, where a few bell-handles are still left, consisting of rods branched into laurel and other leafage. At Geneva, modern improvements have left nothing; but at Annecy, a little good work remains; the balcony of its old hôtel de ville especially, with a trout of the lake, presumably the town arms—forming its central ornament.

I might expatiate all night—if you would sit and hear me—on the treatment of such required subject, or introduction of pleasant caprice by the old workmen; but we have no more time to spare, and I must quit this part of our subject—the rather as I could not explain to you the intrinsic merit of such ironwork without going fully into the theory of curvilinear design; only let me leave with you this one distinct assertion—that the quaint beauty and character of many natural objects, such as intricate branches, grass, foliage (especially thorny branches and prickly foliage), as well as that of many animals, plumed, spined, or bristled, is sculpturally expressible in iron only, and in iron would be majestic and impressive in the highest degree; and that every piece of metal-work you use might be, rightly treated, not only a superb decoration, but a most valuable abstract of portions of natural forms, holding in dignity precisely the same relation to the painted representation of plants, that a statue does to the painted form of man.

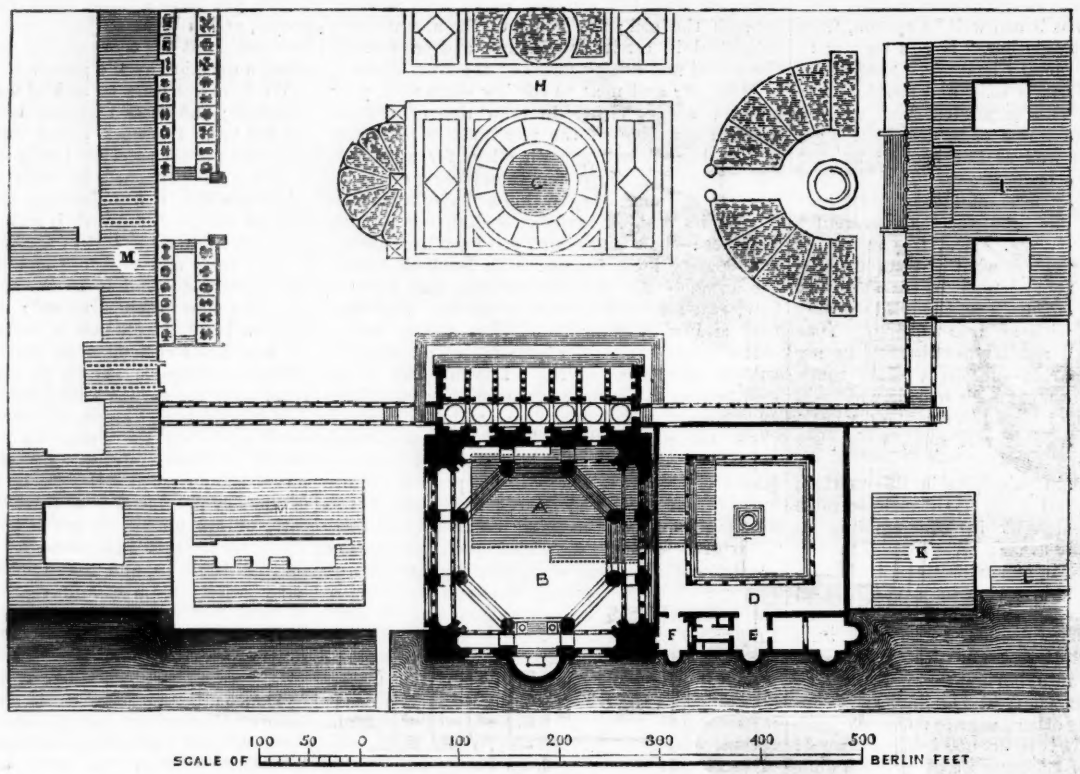
* I do not mean to attach any degree of blame to the effort to represent leafage in marble for certain expressive purposes. The later works of Mr. Munro have depended for some of their most tender thoughts on a delicate and skilful use of such accessories. And in general leaf sculpture is good and admirable, if it renders, as in Gothic work, the grace and lightness of the leaf by the arrangement of light and shadow—supporting the masses well by strength of stone below; but all carving is base which proposes to itself *slightness* as an aim, and tries to imitate the absolute thinness of thin or slight things, as much modern wood-carving does. I saw in Italy, a year or two ago, a marble sculpture of birds' nests.

FAILURE OF BUILDINGS: RESPONSIBILITY.

WE have received some particulars of the failure of very considerable buildings erected in the eastern part of London under an engineer. Various architects and others have been called in to report, but as the matter is likely to be privately adjusted, it may, perhaps, not be necessary to discuss it. We shall see.

SUBURBAN HOUSES FOR WORKMEN.

AMONGST the working classes of the metropolis the complaints are general of the difficulty of finding accommodation sufficiently cheap and suitable for the use of families of children. The consequence of this, as we have often said, is very serious, for it is in those cases where a large number of children are to be reared that the necessity for proper arrangements are the greatest; and it is difficult to estimate the extent of the evil which arises from this serious matter for complaint. According to the present plan of the greater number of the houses in the metropolis which are provided for the use of persons of small income, those who do not like to venture, or are not able, to undertake the risk of tenanting a house, and of meeting a large part of the rent and taxes by sub-letting, find the greatest difficulty in getting satisfactory accommodation. In the long columns of advertisements in the local papers, young men are said to be desirable,—



THE NEW CATHEDRAL AT BERLIN.—*Plan showing adjacent Buildings.*

elderly ladies are much sought after,—a young married couple may find many comfortable homes. In some instances it is condescendingly stated that "one child will not be objected to;" while in other cases, after the convenience of the place has been described, and the cleanliness praised, follows, "children not taken in,"—"those with families need not apply." The consequence of this is, that those who have the greatest need for all the aids to health are driven into neglected places, into back and low neighbourhoods, where both the manners and health of children are deteriorated by sanitary neglect and ill-bred companions.

In the outskirts of the metropolis, where speculative houses are run up, where the pavement is badly formed, families may find that children are not objected to, but are admitted into the damp, unfinished houses, for a time to "air" them. As these streets get into a more habitable condition, the houses fall into other hands, who do them carefully up, and let them to those in a more prosperous condition, who, in case they may have apartments to let, would object to children, and refuse to take them in. This causes the children to be driven from one spot to another, but always to places which are dangerous to both the health and morals of some thousands who are now rising to take the place of the workers of the present generation. It is this which in a great measure causes the large loss of life from bronchitis, scarlet fever, diphtheria, &c.

It is bad for those who are obliged to find apartments for families. As to those who run the chance of meeting the expenses of a whole house, in the hope that the children may be more at liberty and less exposed to the ill effects of overcrowding, and the want of the opportunity of separate arrangements—divisions,—it will be found that even in this position the children are obstacles.

In several of the provincial towns numbers of houses have been built on a plan which insures the privacy of families. In London next to nothing has been done; the well-known causes which lead to this being the expense of land, the expense of sub-leasing, and other matters which have been from time to time referred to in these pages. It is, notwithstanding, a sure yet painful fact that if capitalists could put faith in the belief that those for whom the construction of a different form of dwelling is so desirable would appreciate an alteration, we would soon have a suitable provision.

It is most necessary that such as require improvements should examine those attempts which are made to promote alterations which must produce a most beneficial effect.

At present the railway fare by third class from King's-cross to Holloway is 1½d. This would for return come to 1s. 6d. a-week for the six working days. It, however, unfortunately happens that at Holloway the land is becoming every day more and more valuable, and is eagerly sought for the better class of houses. When we get farther into the fields by the Great Northern Railway, a single fare by third class is 4d. This sum puts it out of the power of the working man who is engaged in London to avail himself of houses which might be properly built and had at a comparatively cheap rate in a pleasant neighbourhood. Along the line of the Great Northern and other railways are spaces of ground, which, in some instances, might be conveniently drained, on which houses and gardens might be usefully built. If a mile of these banks, in a suitable position, were appropriated to this purpose, on which, including each side, 450 detached cottages might be built, if each family's room let at a rental of 4s. per week (8s. per week for each cottage), this would give a rental of close upon 10,000*l.* a-year. If, attached to each dwelling, there was a railway return ticket to town and back, for each working day, for one person, at 1s. 6d. a-week, this would make the rent and conveyance to King's-cross, 5s. 6d. a week for each workman (railway fare, 3*l.* 18s. a-year): this would produce a yearly revenue of over 4,000*l.* There would other income arise from other members of the family being obliged to visit town at the regular fares. It would depend in a great measure upon the style and manner in which such buildings were carried out how much they would cost, but it may be estimated that each double cottage might be put up for 200*l.* and this would leave about 10 per cent. to defray this cost, the value of ground-rent, taxes, &c. At the present time the sloping banks of these railways are rather a source of trouble than profit. This idea has been mentioned by persons who have carefully thought upon the subject, and certainly the matter is worthy of consideration; for if an arrangement could be made, which would make it worth the while of the railway companies, and either some joint stock company or builder, to provide such dwellings as those alluded to, it would be conferring a chance for such workmen as complain of their present situation, to avail themselves of more healthy conditions.

ARTIFICIAL LIGHT ON VEGETATION.—Some inquiry on this subject having been made, a correspondent writes,—"I planted vegetables in a place where daylight could not penetrate, over which I suspended a paraffine oil lamp, with a reflector to throw the light upon the plants. They have grown up a beautiful dark green. I have also lighted a greenhouse with lamps every night, and find it not only increases vegetation, but gives a beautiful deep tinge to the plants."

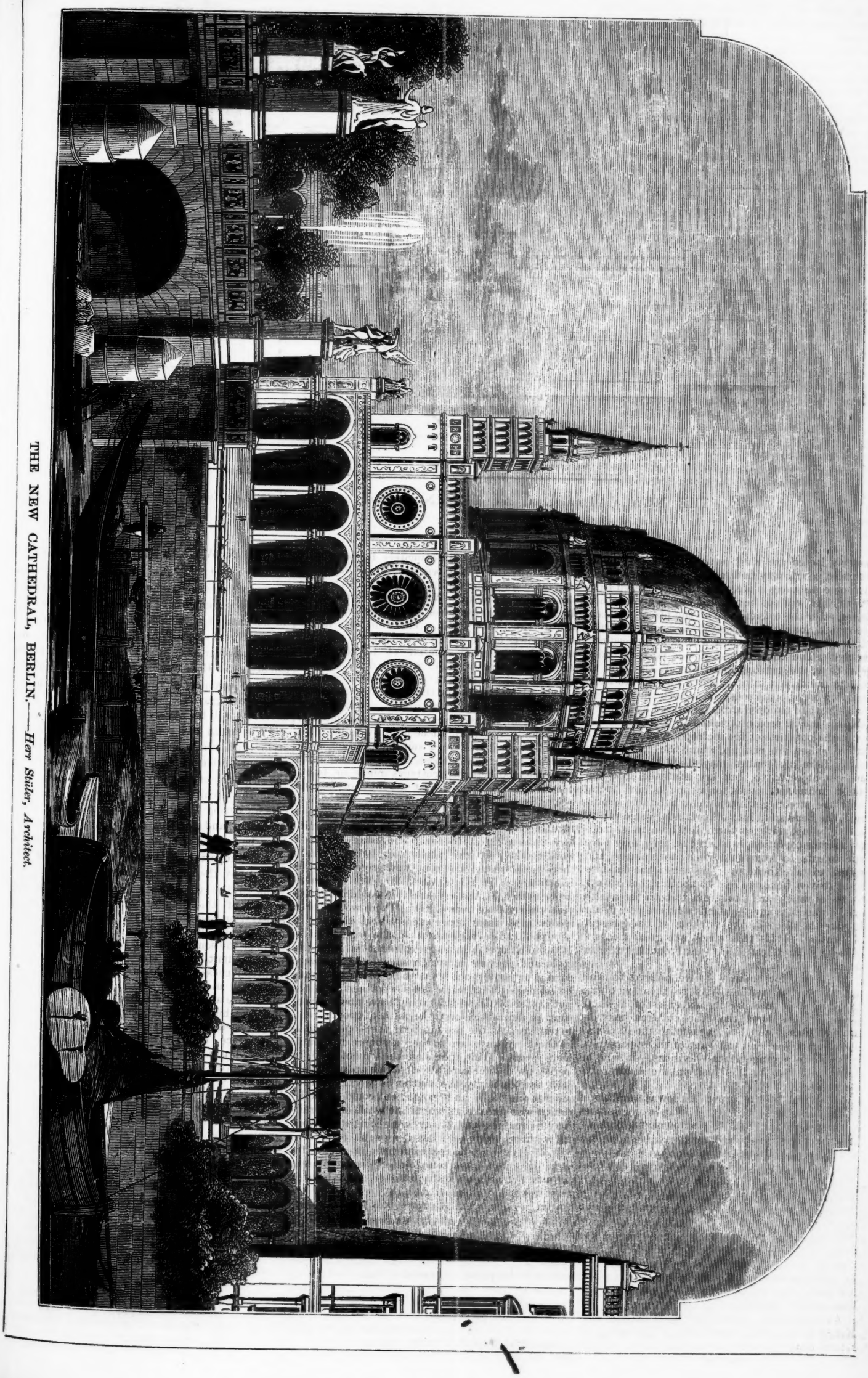
THE NEW CATHEDRAL IN BERLIN.

THE project of a new cathedral for Berlin has for many years been a favourite idea, and occupied the anxious thoughts of the King of Prussia; and he has had from time to time various projects from different parties, professional and *dilettanti*. These, however, seem to have been superseded by the design of Herr Stüler, his favourite architect, who has commenced carrying it into execution. We have engraved a view of the design. In point of scale it will be a very considerable monument, and the artist has sought, by the adoption of a style which recals neither of the other metropolitan cathedrals of Europe, to free himself from the suspicion of plagiarism. In such a case, however, the architect must be justified by his success for daring to break through the trammels of precedent, and asserting a liberty which may, perhaps, be accused of being a license. In a building of such importance, there are two leading considerations, the originality and graceful combinations of the whole as a composition, and the beauty of the details. Of the latter a small illustration does not enable us to form an adequate conception. But it may be doubted whether the style or the combination of the parts, as here represented, admit of that elevation of sentiment and impressiveness of character so essential to an ecclesiastical building of the very highest class; and above all a vigorous treatment of the subject is of the highest consequence, for the absence of which even immense size can hardly compensate. The grace of Herr Stüler's taste will produce many pleasing combinations and elegant rendering of parts; but much study will be necessary to make the present design, as a whole, come up to the mark.

There are few places in Europe which rival the *platz*, where the cathedral will stand, in the great Linden Alley, near the Spree. On one side of the area is the museum, built by Frederick William III. and on the other side the Royal Palace.

REFERENCES.

A. Site of the Old Cathedral.
B. The New Cathedral.
D. Royal Sepulchre.
E. Chapel.
F. Sacristy.
G. Fountain.
H. Garden.
I. The Museum.
K. The Exchange.
L. Machine.
M. Royal Palace.



THE NEW CATHEDRAL, BERLIN.—*Herr Stüler, Architect.*

THE SPEAKER acquainted the House, That he had received a Letter from Mr. Oswald, Member for the City of Dover, signifying his Desire to be excused from serving on the Committee appointed to consider of the most proper Method of completing the British Museum, and of providing a proper Building for the Reception of the Royal Library, and other Collections belonging to the Public, now deposited in the Old Buildings in the Garden of Montagu House.

Mr. Oswald's Letter was read, and ordered to lie upon the Table.

Ordered, That the Report from the Committee appointed in the last Session of Parliament to consider of the most proper Method of completing the British Museum, and of providing a proper Building for the Reception of the Royal Library, and other Collections belonging to the Public, now deposited in the Old Buildings in the Garden of Montagu House, be referred to the Consideration of the Committee appointed this Session of Parliament to consider of the most proper Method of completing the British Museum, and of providing a proper Building for the Reception of the Royal Library, and other Collections belonging to the Public, now deposited in the Old Buildings in the Garden of Montagu House.

Mr. Oswald reported from the Committee appointed in the last Session of Parliament to consider of the most proper Method of completing the British Museum, and of providing a proper Building for the Reception of the Royal Library, and other Collections belonging to the Public, now deposited in the Old Buildings in the Garden of Montagu House, That the Committee had met several times, and had come to several Resolutions thereupon, which they had directed him to report to the House; and he read the Report in his Place, and afterwards delivered the same in at the Table, where the same was read, and is as follows:

"That it appears to this Committee, that the Collections of Books, Manuscripts, Natural Curiosities, and Antiquities, belonging to the Public, and now deposited in the Old Buildings in the Garden of Montagu House, are not sufficiently known to the Public, and that the Access to them is not sufficiently easy and convenient.

THE ARRANGEMENT OF THE READING-ROOM AT THE BRITISH MUSEUM.

ON Monday last, when a vote of 47,425*l.* to complete the sum for salaries and expenses of the British Museum, and another of 12,270*l.* for new buildings there, were taken, a discussion ensued, in the course of which,

Mr. Walpole said the number of books returned to the shelves of the General Library during the year had been 177,290; to those of the Royal Library, 12,428; and to those of the Grenville Library, 687. Adding the number of volumes which the students could command without any order, 754,405, the total number was 876,000, or 3,000 per day, as against 576,000 last year, or 2,000 per day.

Mr. Gregory wished to impress upon the House the necessity for making the British Museum an institution not only for exhibition but instruction. The upper classes could purchase books, and could go to the assistants of the British Museum for information; but, until a system of lectures was established, the lower classes would never have an opportunity of reaping all the advantage of which the Museum was susceptible.

We take occasion to say, that the arrangements in the new reading-room appear to give very general satisfaction. Mr. Watt is generally to be found in the central part of the room, and shows an anxiety in case of need to afford valuable information; and there are other gentlemen here, to whom many readers are indebted for much time saved. The assistants are familiar with the contents of this great library, and also understand the arrangement of the catalogue.

The selection and arrangement of the books in the reading-room may be praised too. Without proper classification, it is not easy to lay hands on the books needed, and it may be useful to print a more detailed description than we gave some time since, of the books, in this library, which can be had by students without the trouble of writing a ticket.

For the use of the readers, plans of the reading-room, mounted on card-boards, are hung at the end of each of the benches. On this the spaces occupied by the books of a similar description are distinctly shown in coloured rays, and the name of the subject, and leading works bearing upon it, distinctly marked. Each press, or division for the reception of the books, is numbered; and the numbers of them in the lower division of the new room range from 2,050 to 2,121 inclusive. There are seventy-one presses of books which can be immediately taken from the shelves.

It is worth while to bear these numbers in memory, for often a reader, not knowing that a particular book is not in this part of the library, refers to the catalogue, and finds, perhaps, a book with the press-mark, 2,100b, and immediately writes a ticket, which he hands to one of the attendants. He would, however, have had nothing more to do than to have gone to the press numbered 2,100, and on the second shelf from the top he would find the book needed. The shelves of each press are arranged to hold folio, quarto, and other sizes of books; and the shelves are marked alphabetically, from the top, A, B, C, D, and so on downwards.

The advantage of having free and uninterrupted access to these books is very great.

In the reading-room readers are as free as if they were in their own library. We mention this the more particularly, for it would be a decided advantage if a similar plan were adopted in all the literary and philosophic and mechanics' institutes throughout the country. Those libraries either have or ought to have a collection of books similar to that in the basement of the reading-room, and they should be quite as accessible. This is the case in some instances, but is not so in others. It will be objected that confusion will be produced by careless persons putting volumes in wrong places. This, however, could easily be remedied by an order to the effect that, while members of the institution should have the privilege of taking books from the shelves, it should be left to a practiced attendant to restore them to their places.

The arrangement of the new reading-room is as follows:—

The black lines are measured, and show proportionately the amount of space allowed for the various subjects.

To the Right of the Entrance.

——— GEOGRAPHIES, VOYAGES, AND TRAVELS. Here are collected the standard geographical dictionaries; the best editions of the works of distinguished travellers, atlases, reports of societies connected with geography, &c.

——— CLASSICS.

——— BIBLIOGRAPHY.

——— THE POETS. Here, although the space is but small, are the best editions of glorious works: here are arranged the poems of Shakspeare, Dryden, Goethe, Schiller, Coleridge, and others. Chalmers's "Encyclopædia of the Poets," and other publications, form useful hand-books to the best productions of the ancient and modern poets, both at home and abroad.

——— BELLES LETTRES occupy about an equal space with the Classics and Geography. And what a distinguished array of names are here arranged. Swift, Johnson, Goldsmith, Stewart, Bentham, Franklin, Webster, Jefferson, Milton, Guizot, Bacon, Hallam, D'Israeli, Scott, Southey, Coleridge, and others.

——— BIOGRAPHY. From the works of the poets, &c., above-mentioned, we pass to the account of their lives. The amount of space given is considerable, as this department contains records of those who have been distinguished in literature, science, and art.

——— THE FINE ARTS are modest in their claims, notwithstanding there is much valuable matter in a circumscribed space.

——— BOTANY does not even demand so much space as the Fine Arts; but grave

——— PHILOSOPHY stands prominently forward, and so numerous are the well-known publications in this department, that we must pass them over with bare mention. Considering the endless ramifications and uncertainty of the

——— LAW, one might have feared that it would have needed much more room than other departments of literature: it does not, however, do so; and although we have reports of the State Trials, "*Abridgements*," which are of extraordinary bulk, &c., the law books are but as a dwarf in contrast with a giant, in comparison with

THEOLOGY. The religious periodical journals, transactions of societies, the reports of societies, and the writings of the most distinguished divines, are here ready for reference. Those various phases of literature complete the information which is contained in one semi-circle of the New Reading Room of the British Museum.

Retracing our steps once more to the entrance we turn to the left hand, and find, first, a most, valuable collection of books on

——— TOPOGRAPHY. Here are county histories; ancient and modern histories of London and its environs; accounts of England, Wales, Ireland, &c. &c. &c. This department is admirably selected and arranged.

HISTORY requires the largest amount of space:

LITERARY JOURNALS and periodicals occupy the next greatest space in comparison with history and theology. Here are ranged the volumes of the Athenæum, Annual Register, Builder, Edinburgh and Quarterly, North British, European, Westminster, Dublin, and other Reviews, the Gentleman's Magazine, Frazer's, Blackwood's, Eclectic, Monthly, Penny, and other Magazines, &c.

——— ENCYCLOPÆDIAS present a formidable and invaluable array, much greater than the

——— DICTIONARIES of many languages; and then we have

——— PEERAGES, GENEALOGIES, DIRECTORIES, CALENDERS, &c. which end our list.

REPORT OF THE COMMISSION APPOINTED TO CONSIDER THE SUBJECT OF LIGHTING PICTURE GALLERIES BY GAS.

THE commission, consisting of Professors Faraday, Hofmann, and Tyndall, Mr. R. Redgrave, R.A. and Captain Fowke, R.E. appointed for the purpose of reporting to the Lords of the Committee of Privy Council on Education on the lighting of picture galleries by gas, and on any precautions (if necessary) against the escape of gas, and the products of its combustion, having met at various times and considered the subject referred to them, now make the following report.

There is nothing innate in coal gas which renders its application to the illumination of picture galleries objectionable. Its light, though not so white as that of the sun, is equally harmless: its radiant heat may be rendered innocuous by placing a sufficient distance between the gas jets and the pictures, while the heat of combustion may be rendered eminently serviceable in promoting ventilation.

Coal gas may be free from sulphuretted hydrogen compounds, and in London is so at the present time: it then has little or no direct action on pictures. But it has not as yet been cleansed from sulphide of carbon, which, on combustion, yields sulphuric acid gas capable of producing 22½ grains of sulphuric acid per 100 cubic feet of present London coal gas.* It is not safe to permit this product of the combustion to come in contact with pictures, painted either in oil or water colours; and the commission are emphatically of opinion that in every system of permanent gas lighting for picture or sculpture galleries, provision should be made for the effectual exclusion or withdrawal of the products of combustion from the chambers containing the works of art.

The commission have examined the Sheepshanks' Gallery as an experimental attempt to light pictures with gas, and are of opinion that the process there carried out fulfils the condition of effectually illuminating the pictures, and, at the same time, removing the products of combustion. According to the indications of the thermometer required and obtained, it does this in harmony with, and in aid of, the ventilation, and does not make a difference of more than one degree Fahrenheit at the parts where the pictures are placed, between the temperatures, before and after the gas is lighted.

Certain colour tests, consisting of surfaces covered with white lead, or with vegetable and mineral colours (especially the more fugitive ones), and in which also boiled linseed-oil, magylp, and copal varnishes were employed as vehicles, had been prepared, and were, when dry, covered one-fourth with mastic varnish, one-fourth with glass, one-fourth with both mastic varnish and glass, and one-fourth left uncovered. Sixteen of these have been placed for nearly two years in different situations, in some of which gas has been used, in others not. They give no indications respecting the action of coal-gas (except injury from heat in one placed purposely very near to and above the gas-burners), but seven of them show signs of chemical change in the whites, due to either a town atmosphere or want of ventilation. The most injured is that from the National Gallery, Charing-cross; and the next is from a country privy: the third, much less changed, is from the House of Commons: the fourth is from the Barber Surgeons' Hall; the fifth from the Bridgewater Gallery; the sixth from the Royal Society's Rooms, Burlington House; the seventh from the British Museum.

The remaining tests hung in—

1. Sheepshanks' Gallery, South Kensington;
2. Secretary's room at South Kensington, where no gas is used;
3. Mr. Henry Drummond's drawing-room, at Albury Park, Surrey;
4. Sealed up and kept in a closet in the secretary's room, at South Kensington;
5. Lambeth Palace, vestibule of the staircase;
6. British Institution, Picture-gallery;
7. Windsor Castle, room with a north aspect, without gas;
8. Mr. Thomas Baring's Picture-gallery, 41, Upper Grosvenor-street, frequently lit with gas;—present no observable change in this respect.

Though apart from the especial subject submitted to the Commission, the members cannot resist a recommendation that this kind of trial, which is especially a painter's experiment, should be continued for a longer period, and, indeed, be carried out on a more extensive scale.

The Commission think it right to state that they were unanimous on all the points to which their attention had been called, or which are referred to in this report.

(Signed) M. FARADAY.
A. W. HOFMANN.
JOHN TYNDALL.
RICHD. REDGRAVE.
FRANCIS FOWKE, Capt. R.E.

South Kensington, 20th July, 1859.

ELEVATION OF BUILDING OPERATIVES.

AMONGST the principal causes that have combined to necessitate reform amongst the building operatives, stands the want of unity and co-operation between them: never were they less united than at the present time; and the result has been described by Mr. Scott Russell in his lecture "On what mechanical workmen should be taught," at the Brompton Museum, a report of which appeared in the *Builder* of the 11th ult. He stated that he was obliged to get his best mechanics from foreign countries: at the same time he remarked, that the English workman had been at the head of the workmen of Europe.

* Hofmann.

Thus, he proves that the position of the British mechanic is retrogressive, whilst the age is progressive. Is not this state of things a disgrace to the mechanic, the employer, the architect, and the Government? Where is now our much-vaunted civilization? The time is come for us to arouse ourselves from our lethargy, not only by reducing the hours of labour, and increasing the hours of study, but by adopting the suggestions of "An Architect and Well-wisher to the Body of Workmen," which appeared in the *Builder* of the 26th of February last. Masters and men must unite for the mutual improvement of their respective professions; emulate the architects, and the medical profession,—and follow the example set by their fellow-workmen in Victoria (Australia), who are about to build a trades' hall in Melbourne, and whose government has granted 15,000*l.* to purchase the land to build it upon. This is what is required in England; a kind of university, through which every mechanic should pass, and in which every mechanic should receive a certificate, first, second, or third class, according to his skill in his trade, but not according to the amount of material he should destroy; for some of the work turned out is nothing less than a wholesale and sinful destruction of material. These certificates should determine the rate of wages to be given; for it is nothing but fair that the best and most skilful workman should receive more wages than the negligent, careless, and unskilled workman, who, like the lower animals, has strength without the necessary qualifications to apply it. Therefore, like those animals, if not carefully watched by a superior, he would soon create extra work for his fellow-workmen. Amongst carpenters and joiners there are at least four classes of workmen. The first, who are but few, and and bear a proportion of perhaps 1 to every 150 or 200, are superior men in every respect. Their scientific knowledge is extensive, their powers of reasoning are unsurpassed, and their minds are vastly contemplative: they are thoroughly acquainted with their profession, can manufacture any thing of wood, whether bounded by straight or curved lines, and ever so complicated; and though their knowledge of the sections and developments of solid bodies, they can do their work with the least quantity of material, and in the quickest and readiest manner. All foremen ought to be, and are sometimes, chosen from these. The second-class workmen, of which there are about 20 or 25 per cent. are sometimes erroneously called first-rate workmen; but though they can do anything circular in plan, they do not understand that which is circular in plan and elevation at the same time: they are not so studious as the first-class workmen, but are good, sound, careful workmen, and, under really efficient foremen, may become tolerably fair substitutes for what I call first-class mechanics. Of third-class or ordinary workmen, there is, doubtless, the greatest number: they are often ignorant men, and if driven, or paid by the piece, some of them will turn out their work disgracefully; though when treated well, and having plain working drawings carefully set out by the foreman, they will turn out plain work as an Englishman was wont to see it turned out. The men I shall call the fourth class-workmen, are those who seem almost brainless: they are sometimes put to good work, but are only fit to mend an old floor, or nail a ledge-door together; yet no distinction is made between them and those I placed first on the list: this must be wrong in every respect, and tends very materially to aggravate the evils from which we suffer, and, aided by competition, it gives rise to the complaint of Mr. Scott Russell before mentioned. According to the present vicious system, that every man shall be paid alike—as though it were a moral impossibility for one mechanic to be superior to another—there is no stimulant to urge the mechanic to study and acquire excellence in his trade: he knows that he is as likely to be a loser as a gainer by it, and even more so, for it is so fashionable now-a-days not to have the right man in the right place, that there are a great many inefficient foremen who are chosen from those workmen I have placed in the third class, on account of their glibness of tongue and their canting dispositions, and who, consequently, cannot endure a man better than themselves. A really efficient foreman fears no man: he has confidence in himself, and is beloved by his men.

The panacea for all the evils from which the building operatives of the United Kingdom are now suffering is to be found in the establishment of an institution with which every person connected with the building profession must be connected, and through which every mechanic must pass for examination as often as he pleases, in order that he may receive the certificate which will determine his rate of wages. All will be thus united, and the results will be power and influence, contentment and prosperity, national excellence and social progress, and above all mutual good fellowship between every member and every branch of that noble and beautiful profession, and the general prostration of vicious and rapacious competition.

I am not so sanguine of the results of the hours of labour being reduced to nine instead of ten hours per day as some; neither do I view it with such alarm as Mr. T. L. Donaldson: the effect will be but trifling to all parties concerned; but I wish to urge the necessity of reform in the right direction, believing the time has come for us to be up and doing, if we wish to maintain our elevated position amongst the nations of the earth.

THOMAS T. SMITH, Joiner.

THE SANITARY ASSOCIATION OF LADIES.

THE first annual meeting of an association for the diffusion of sanitary knowledge, formed by a few ladies, has been recently held. Although this society is managed by and altogether formed of ladies, the Earl of Shaftesbury took the chair on this occasion, and several other gentlemen of influence were also present. The reason for the establishment of this association is the belief of the founders that in the majority of cases the cause of a low physical condition is ignorance of the laws of health. The report stated that the committee had issued upwards of 20,000 tracts upon the management of children: they had also devoted their attention to improving the pattern of children's clothes, but from the want of funds they had not been able fully to carry out the intentions of the association.

We are glad of the formation of this society, because we believe that, even amongst a large number of educated women, sanitary laws are little cared for, and less understood; and that, if this society be properly supported and carried out, it will be imitated in other towns, and be the means of saving a large number of the one hundred thousand lives destroyed each year by preventable diseases.

During a long experience we have often noticed with pain the loss of life which has resulted from the neglect of the most simple sanitary laws: it is through want of this knowledge that numerous children are smothered by wrapping them in bedclothes, shawls, &c.: the atmospheric air is kept from them, and they are poisoned by their own breath. Ignorance causes nurses and mothers to swaddle up infants in tight bindings, which prevent the proper action of the heart and lungs, which leave the chest exposed to the weather, and allow young children in the hot sunshine to be exposed to the burning rays. Hundreds of young children even among people who are well to do, are killed annually by improper feeding. Some are fed with animal and vegetable food before the teeth have appeared and the stomach has become sufficiently strong for the reception of such matters. Others are suckled for long after milk has ceased to be sufficiently nutritious, nay, has become injurious to health. Again, opiates, if they have the effect of producing temporary quietness, surely act injuriously on the constitution. Medical men in large practice amongst the middle and poorer classes, say that on the night after Christmas-day, they do not expect to have much rest, in consequence of being called to attend upon children seized with convulsions, in consequence of improper food. If knowledge of these matters were general, parents would surely not risk the lives of their children through mistaken kindness.

It would be a means of saving many lives if it were more generally known what portions of vegetables and fruit are indigestible, and must, by lodging in the stomach, produce dangerous diseases. A hundred instances might be given of deaths caused through ignorance of the right laws of health. Young mothers are persuaded by ignorant monthly nurses that large quantities of stimulating drinks are actually necessary when nursing infants: this has led to mischief, and caused the ruin of many.

The management of sick rooms, the proper ventilation of rooms of all descriptions, a knowledge of those gases which destroy health and life, and the means to be taken to counteract or prevent their effect, the ventilation of schools, the danger of damp, and many other matters on which the welfare of the community depend, ought to be made matters of female education.

We know that much good has been done by some of the most intelligent of the medical profession directing the attention of their patients to the sanitary conditions by which they are surrounded: as much, and often even more, good may be done by discovering and directing that sanitary defects of a dwelling should be removed, than by giving medicine; and when ladies visit the homes of the poor, both in towns and villages, they might, while doing other good, often save life by quietly directing attention to neglected and erroneous sanitary arrangements.

All who know the sanitary evils, and want of knowledge, which exist, will rejoice, as we do, at the formation of the Ladies' Association for the Diffusion of Sanitary Knowledge, and wish earnestly its success.

DRY CLAY BRICK AND TILE MACHINERY.

WE mentioned last week the machine patented by Messrs. Bradley and Craven (not Madeley) and exhibited by Mr. H. Chamberlain. This and other machines exhibited by the same gentleman received the highest reward the judges could bestow.

The following from Mr. Chamberlain will interest our readers:—

"In introducing this system of brick and tile manufacture, which is no doubt novel to many readers, I must make a few remarks on the advantages they offer over the old plan. Brick-making has been hitherto carried on during a limited season of some six months in each year, or during the long days; as the bricks could not be dried in the winter, and frosts would totally destroy them. The result of such a system presses very hard upon the brick labourer, who only finds full employment for one half his time. Again, a large stock of bricks is obliged to be made, to meet the demands for the winter months, and if trade is not very flourishing the manufacturer has to hold them, or sell them at a great sacrifice. On the other hand, it often occurs that works are seriously delayed in the spring, from the make of the previous year being exhausted, and no further supply can be obtained until the new bricks of the current season are ready for use. The dry clay machines meet these emergencies, for all they require is a shed in which the clay may be stored as it is raised from the earth, a machine house, and kilns. If the clay-shed holds sufficient material for a month or six weeks' consumption, the works can be kept on uninterruptedly during the whole year, giving constant employment to the labourer, and enabling the manufacturer to meet any demand. In districts of the country where coals are cheap the bricks are dried on flues throughout the winter; or where my improved brick-works are erected, they are dried both in winter and summer, by the waste heat of the burning kilns. In use of flues, the consumption of fuel is considerable for this purpose, and therefore greatly increases the cost of manufacture. The saving of labour in making the bricks from dry clay is immense. When made in a plastic state, the clay must be tempered and worked, at great labour, into a perfectly homogeneous mass, and after manufacturing the bricks they have to be spread on drying-floors, or walled on drying-ground, to evaporate the water that it has taken so much trouble to thoroughly mix and work into it. As the drying ground for a large work is necessarily extensive, the labour of the several removals must entail a costly process, while on the dry clay making nothing more is necessary than to throw the rough earth into the machine, when it is delivered out a perfect brick for removal to the kiln at once for burning. The difficulties that arose during the first trials of this system were several, and many expensive experiments were carefully conducted before the machines were sufficiently perfect to introduce to the public. The first serious drawback was the difficulty of expelling the whole of the air from the clay, as the latter made a perfectly tight joint round the pistons before the whole of it was expelled, and the result on its release from pressure was a series of laminated cracks on the face of the brick, caused by the expansion of the air on being released from pressure. This is now entirely mastered in the following machines. Another difficulty also presented itself, viz. that a machine which would make a perfect brick from a strong plastic clay if quite dry and very finely sifted, was quite useless if the clay was damp. The machines I now introduce have overcome these defects, and will work equally well with clay dry or damp, coarse or finely sifted. In practice it is found advisable with strong clays to use a portion of sand with

the earth, the same as in plastic clay manufacture. The pressure can be regulated to anything desired, so that bricks can be made of the densest description for engineering purposes, or they may be made of as open a texture as the hand-made brick, by giving less pressure, and the addition of sand to the clay.

For fire-brick making these machines are particularly adapted, and in case of existing works that have proper grinding mills, the machine only is necessary."

THE NEW THAMES GRAVING DOCK COMPANY.

THE shareholders in this company (of whom, by the way, there are but few), with their friends and a number of gentlemen interested in shipping and scientific improvements, were present by invitation at the new docks, adjoining Victoria Docks, Plaistow, on Wednesday last, to see a ship raised and to inaugurate the company.

Under the old plan of graving docks, it is necessary, as our readers know, to excavate each dock to a depth sufficient to float the largest ship intended to be repaired, and to construct at the entrance of each dock a flood-gate, or pair of gates, to keep the water out.

For ships of the size now in common use, the depth of a repairing dock must be about 24 feet; causing a heavy expense for excavation and retaining-walls of masonry, independently of the cost of the tidal gates.

An entry into docks of this construction is effected at, or soon before, or after, high water. The gate is then closed; and at low water, on a tidal sea, the water is allowed to run out until the ship is left dry for examination or repair in a sort of pit, always damp, and, in winter, soon dark. In tideless seas a graving dock must be emptied by the slow and expensive process of pumping.

These difficulties and expenses are diminished, and in some instances removed, by the plans adopted in the New Thames Graving Docks.

Twenty-eight acres of land, owned by the company, are distributed, besides wharfage room, into a narrow water-channel, about 30 feet deep, in which the hydraulic lift is erected, and an open shallow basin, and eight separate shallow graving or repairing docks, around which shipwrights will set up their sheds and shops.

The hydraulic lift consists of two parallel rows of sixteen cast-iron columns, each 5 feet in diameter, and 60 feet in length, sunk into the ground, under the water, about 12 feet. These columns are 20 feet apart in each row, and the clear space between the two rows is 60 feet.

Each column contains a hydraulic press 10 inches in diameter, and of 25 feet stroke, the top of the press being at the ordinary level of the water. The ram of each press carries a small crosshead, from which are suspended, by means of descending rods, two wrought-iron girders 60 feet in length, which extend entirely across the dock to the corresponding column and press on the opposite side. There is thus a series of thirty-two suspended girders extending entirely across the dock, and when the presses are lowered, lying at the bottom of the dock, in 28 feet of water, these really form a large wrought-iron girder, which, by means of the presses, may, with a vessel upon it, be raised out of the water or lowered at pleasure. The vessel to be docked is not raised directly upon the gridiron, but upon a wrought-iron pontoon, proportioned to the size of the ship to be docked. This pontoon is first placed on the gridiron, and sunk with it to the bottom of the water. Then the ship is brought between the columns and over the pontoon, and a 50-horse engine working the hydraulic presses, raises the gridiron, the pontoon, and the vessel altogether, until they are clear of the water. At this stage of the proceedings the pontoon empties itself of water through valves provided for the purpose; the valves are then closed, and the gridiron being again lowered to the bottom, the pontoon with the vessel seated upon it, is left afloat on the surface. The shoring of the vessel (a work of difficulty and cost under the old plan) is accomplished by large moveable frames or sliding wedges, which, while under water, are drawn into close contact with the vessel, so that she sits on a huge timber cradle without possibility of being strained.

In less than forty minutes, a vessel drawing 18 or 20 feet of water, is thus left afloat on a shallow pontoon, drawing only 4 or 5 feet, and may be taken in one of the eight shallow docks, where convenient workshops, with tools and shelter for the men, will be provided for working, close up to the bulwarks of the vessel.

The company was founded in April, 1857, and the first contract for works was accepted in July of the same year. It appears from a statement made by Mr. Stephenson, M.P. at the second general meeting of the company, that experiments with one pontoon had been carried on during the months of November and December, 1858, and in March of the present year they had let one dock and one pontoon to a respectable ship-building firm, at a fixed rent, and a charge of 6d. per ton for every ship lifted. Up to the date of the meeting eighteen ships * had been lifted without the slightest accident of any kind, and the earnings of the previous six weeks had produced an average of over 50*l.* a week, with one pontoon only.

The ship raised on Wednesday was the Jason of Aberdeen, of about 100 tons burden, and the whole operation was performed in the most satisfactory manner, without the slightest hitch of any kind.

At a luncheon, which followed, Sir Joseph Paxton proposed the health of the engineer, Mr. Edwin Clark, under whose patent the company is established; and Mr. Clark explained how the arrangement had grown out of his experience in raising the tubes of the Britania-bridge. There were also present Sir Morton Peto, Mr. Betts, Mr. G. F. Young, Mr. Macdonald, Mr. Stokes, Mr. N. Gould, Lord Clarence Paget, Mr. George Berkley, Mr. Le Neve Foster, Mr. W. Haywood, and others. Mr. Samuel Sidney is the secretary.

HEALTH AND THE SEASON.

WITH the extraordinary heat the mean height of the barometer during the second week of July being 30·058 in. the mean temperature of the week was 71 degrees, which is higher by 9·3 degrees than the average of the same week in 43 years; the thermometer reached at one time the high point 92·5 degrees in the shade, and in the sun it reached 116 degrees), the death rate has increased 300 beyond the average deaths which the second week of July should have produced. The chief cause of the extra deaths is diarrhœa: taking four weeks, the deaths from this cause have been 34, 58, 132, 264, and it is worthy of notice that out of those 264 deaths, 245 occurred to infants before they were two years old: it thus seems that only 19 deaths happened above two years of age. Besides the deaths from diarrhœa, 25 are attributed to cholera or choleraic diarrhœa, all amongst children except two. The increase of the deaths from diarrhœa, which generally takes place at this time of the year, is often attributed to the eating of fruit and vegetables. When we learn, however, that so many cases have been fatal to children who were barely able to eat, it shows that the deaths have been generally caused by some other agents. It is remarked that this disease has been most fatal in districts rather removed from the Thames. In St. Pancras there were 28 deaths. These facts agree with the opinions we have often expressed, that although the Thames is both dangerous and unpleasant, there is far more danger where stagnant drains and cesspools are allowed to fester below or close to dwellings.

THE DRINKING-FOUNTAIN MOVEMENT.

MR. AND MRS. GURNEY have presented a fountain to the city of Norwich. It is of pink granite, with trough for cattle, &c. and is to be put up on Tombland.——A subscription is on foot at Gravesend for the purchase and erection of four cast-iron fountains, at a cost of about 100*l.* A free supply of water for one in West-street has been offered by a Mr. Nettleingham.——Subscriptions are being obtained for a fountain at Southsea, to be erected on the common at Fore Barn.——A fountain has been erected in Market-street, Oxford. The front is of Portland stone, and the back of white veined marble. The design was furnished by Mr. Galpin, surveyor to the Street Commission.——The mayor of Chester has undertaken to erect a fountain at the junction of the five roads in Bridge-street. Another is to be erected by the City Council in Boughton. Dog-troughs will be added.——A fountain has just been constructed, at the cost of Mr. Alderman Heywood, for the Manchester city council. It is intended to be erected at the junction of Swan-street and Oldham-road. Its base forms an equilateral triangle, on the angles of which are three cast-iron ornamental pillars, from which spring three arches, united in the centre at the top. Depending from these there is a branch of ivy leaves, and from whence issues the water, which falls into the granite bowl. The surplus water then passes interiorly into a trough, formed in one of the sides of the stone pillar which supports the granite bowl, and is there intended for the use of dogs. Messrs. Patteson, marble cutters, were the makers.——The first public drinking-fountain for Carlisle has just been completed. It has been provided by the corporation, and is placed at the corner of Rickergate and Corporation-road. It is a mural fountain of red granite.——Fountains are now rising in all directions,—in railway stations, in the poor neighbourhood of St. Giles's, and elsewhere. We hope while this work is going forward that the margin of the Thames will not be neglected. On or near the steam-packet piers a glass of cool pure water is often a necessity. Father Thames would look awfully black by the contrast, but he must be so well aware of his condition, that he could not possibly feel offended at the introduction of what he is no longer able to supply. A drinking-fountain has been erected in Endell-street, by the Messrs. Wills, and is the gift of Mr. Marmaduke Langdale. It comprises columns and arch in polished red granite and serpentine and alcove of white marble.——At Weston-super-Mare, a drinking-fountain is in course of erection at the end of the Esplanade, from the design and under the direction of Mr. Charles Phipps, architect, of Bath. It is Gothic in style, and built of Bath stone, with Devonshire marble columns, and inscriptions in Minton's encaustic tiles. It will stand about 10 feet high, and have three outlets for the water: the cost will be about 50*l.*

* Since that date to the present time (27th July) about ten additional ships have been lifted.

CHURCH BUILDING NEWS.

Putney.—On Thursday, the 21st instant, the new church of St. John the Evangelist, at Putney, Surrey, was consecrated for divine service by the Bishop of London. This church is on a site to the west of Putney-hill, presented by Mr. John Temple Leader, late M.P. for Westminster, who also subscribed the munificent sum of 2,500*l.* towards its cost, which will be about 4,600*l.* The design is in the Early English style, having clerestory, aisles, transepts, and chancel, with open timber roofs, and poppy-headed open seats. The exterior is faced with rag-stone, with Bath stone dressings. There are sittings for 500 adults, without galleries. An organ has been put up by Messrs. Hill and Son in an organ chamber, erected over the vestry. Mr. Charles Lee was the architect, and Messrs. Aviss and Sons, of Putney, were the builders.

Llangoedmore (*Cardiganshire*).—The parishioners are about to remodel their church, and refit the whole interior, from plans prepared by Mr. Withers, architect. The present edifice was erected about thirty years since in the fashion of those times, wood window-frames, high and irregular pews—now all going fast to decay. These are to be replaced by Bath-stone windows. Open benches and chancel stalls, a vestry, and other improvements, also form part of the proposed work. The contract for the whole has been taken by Messrs. Davies and James, builders, of Cardigan. Some cartoon memorial windows to deceased parishioners are being painted by Messrs. Lavers and Barraud, of London.

THE THORNTON WINDOW, ST. NICHOLAS, NEWCASTLE.

IN a recent number of the *Builder*, I notice a quotation from a local paper, showing that it is proposed to alter the east window of the famous church of St. Nicholas, in Newcastle-upon-Tyne.

In that paragraph it is mentioned that the window was erected in the fifteenth century by Roger Thornton, a man of whom this northern town has reason to be proud. He came there a poor boy, and by his ability and integrity raised himself to the position of a wealthy merchant, and in course of time he became a great benefactor to the town. The memorial to such a man should be considered sacred. Moreover, this window was a good example of the style of architecture of the period at which it was erected. It is very likely that Roger Thornton's memorial window was decorated with stained glass, recording particulars: this may have been destroyed. I remember, when the revival of glass-staining was commenced, about twenty-five years ago, that some stained glass, which was at the time considered remarkable, executed by a townsman, was placed in the window, but so great have been the improvements in this art that it is considered to be contrary to good taste.

The report says that, in conjunction with the Ions Memorial Committee, it is determined

to put new stone-work into the window, with a view of having it filled with stained glass as a memorial to the late Dr. Ions. It is also said that the "new window will be considerably higher than the present one, and will be filled with tracery retaining the features peculiar to windows of the perpendicular period." It thus appears that not only is the memorial window of Roger Thornton to be devoted to another purpose, but its very shape and the peculiarity of its architectural features changed. Few know better the musical ability and worth of the late Dr. Ions, and would more gladly do him honour, but I do not think that this should be done by removing the traces of a man who was greatly distinguished by his charitable and other deeds. Moreover, it seems to be a matter of doubtful taste to alter the size and shape of an important feature in an ancient church. Hundreds of times I have admired the picturesque effect of the choir of St. Nicholas's Church, the peculiar depth and richness of its light and shade, and this will be in some measure changed by the alteration in the size of this important light. The removal of the unsightly screen and organ, and one or two other matters, would be the means of making this one of the most spacious and beautiful parish churches in the kingdom. A NEWCASTLE MAN.

THE STORY OF CHICHESTER CROSS.

ONCE upon a time—that is to say, three centuries and a half ago—there lived in this quaint, quiet, old town of ours, this dear old Chichester, a certain bishop whose name was Edward Story. And the people loved him, not because he was their bishop, but because he was such a kind-hearted, good, old man. Good cause had they to love him; for he was their staunch friend. "Friends of the people" are plentiful as gooseberries now-a-days (particularly at election times); but they were "few and far between," indeed, in those old times of which we speak—in the year of grace 1500. As the bishop passed along the street children stopped in their play and knelt to receive his ready blessing. The merchants laid aside their dealings, paused in their chafferings for higher prices, out of respect to their ecclesiastical father, and uncovered as he passed along. All harsh words or angry looks faded away; in fact, the bishop seemed to be surrounded by an atmosphere of calm and happy religion, which influenced all who came into his presence.

He had passed the prime of life when he first came to the town, full twenty years before; he had laboured all that time in doing good to all around him,—in proving that true religion lives in our deeds far more than in our words; they had seen his hair grow whiter year by year, till now 'twas as the driven snow; and they had seen those manly shoulders bending more and more with age and infirmity. All knew he could not last much longer; but a gloom spread over the whole town when the news passed from mouth to mouth that the good bishop had given orders for his tomb to be prepared, and with heavy hearts they soon heard the sculptor's chisel chipping away the marble to form a plain but solid monument. That table tomb still exists; but how few among us think of the mouldering remains beneath—of the mere handful of dust which now represents all that was mortal of him who was one of the best Christians the town ever knew.

But the old man did not die yet. He had done much already for the good of the townspeople. The founding of the Grammar School in West-street was one of these good works; but there was one other which he wished to see completed—one upon which he had pondered, and which had filled his large heart for years. Often had it sorely grieved him to see the poor peasantry come wearily trudging into the town from the village of Boshenham with fish, or with vegetables from those hamlets among the forest-covered hills, and obliged to offer their wares in the open streets, exposed to the glaring sun in summer, to the drenching rains of autumn, or shivering amid the ice and snow of winter. He determined to build them a market-house; some say he drew the design with his own hand, and I believe it, for bishops were often their own architects in those days. He bought a piece of ground of the corporation, for 10*l.*—a much larger sum then than now. Ruskin tells us, and we all know it to be true, that men worked with their whole heart in those times: whatever they found to do, they did thoroughly. A barn would have served the purposes intended; but they could not do things in that style. If they had a building to erect, they made such a one as future ages might look upon with pride and pleasure—they made it a "thing of beauty" which should be "a joy for ever;" and in spite of the bad taste of the Goths of the last century, who added that lantern at the top, and put that hideous iron fencing round it, the cross is still one of the greatest ornaments of the city. Here the poor people could sell their goods exempt from tolls, and protected from the weather. One of our city chroniclers tells us, also, that the bishop left an estate worth 25*l.* at Amberley, to keep the cross in repair. He further tells us that the corporation sold this estate a few years afterwards, in order to buy one nearer home. Can any one tell us where the estate is which they bought, or ought to have bought? Some one fond of searching among dusty old records might do good service to the town by ascertaining what amount of truth there is in this statement.

So much, then, for the previous history of our City Cross. Its present state, we all know. And now I have a hint to throw out as to its future use, a hint which there are many good men and true who are ready to act upon at once. Its only use at present is to record the flight of time, and even this simple duty it very imperfectly performs; for one has to find the mean between the four dials before he can satisfy himself as to "What's o'clock." What I would beg to propose is, that it should be converted into a DRINKING FOUNTAIN. Let there be a seat where the wayfarer could rest himself, protected from the rain or from the fierce rays of the summer sun, and let there be a constant supply of filtered water. All who have seen how greatly these drinking fountains are appreciated by the working classes of the metropolis and the large towns of the north will, I am sure, gladly come forward to support such a plan. Let us not be left behind in this age of progress, but unite at once in doing so good a deed. A comparatively small amount will make this the most perfect thing of the kind in the kingdom. Its position, too, is just adapted to such a purpose. Let us not refuse the healthful and refreshing draught to the tired and thirsty wayfarer, but come forward at once and convert this beautiful structure into a drinking fountain, and so, in the spirit of its good founder, finish "The Story of Chichester Cross." CARL.

ARCHITECTURAL COPYISM.

HOLLOWAY AND WEYMOUTH.

SIR,—In the interests of art and honesty, I should like to be informed how it happens that St. Luke's Church, Holloway, by Mr. Lee, not yet quite finished, is so exactly like, externally at any rate, St. John's Church, Radipole, Weymouth, that I should conclude they had been erected from the same drawings. The latter church was built in 1850, and is attributed to Mr. Talbot Bury. I enclose you the means of judging as to the correctness of my assertion. TOO BAD.

VENTILATION OF SCHOOLS.

COMMITTEE OF COUNCIL.

SIR,—It was only a few days ago that my attention was directed to Mr. Beattie's letter contained in your journal of the 11th of last month; otherwise I should have taken earlier notice of his criticisms upon the Hyde warming and ventilating apparatus.

Mr. Beattie's difficulties are not new to me; they are generally suggested by those who have thought at all on the subject of ventilation, but who have failed to apprehend at once the entire principle of this apparatus.

If your correspondent will look again at the paper sent to him by the Committee of Council, he will see that he has omitted to notice the fact that the supply of fresh air to the school is from the heating-chambers (as they may be called) connected with the stove; and that the fresh air therefore enters the room at a very high temperature, far higher than that of the vitiated air ascending from the children. The consequence is, that a large volume of fresh air, thus rendered specifically lighter than the vitiated air, is continually rushing up into the upper part of the room, and as it cools, descends till it meets with and greatly dilutes the much smaller volume of vitiated air that is generated in the room. So considerable is this dilution that the air breathed by the children in a school warmed by this apparatus is found to be sufficiently pure for health and comfort, and, in fact, as pure as we can probably hope to obtain it in a closed building.

Towards the close of his letter, Mr. Beattie evidently contemplates fresh air being admitted into the room through ventilators in the floor or skirting-board. But if he will write to the manufacturer, Mr. J. Carter, High-street, Winchester, for a full description of the stove, he will see in the paper that will be sent to him a direction for the careful closing of *all* the customary ventilators while the stove is in use; as the only fresh air admitted into the room, with the exception of that supplied by the leakage of windows and doors, is intended to find its way through the heating chambers. Moreover, he will see that to provide as far as possible against the ventilating drains being supplied with fresh air from the doors and windows, rather than with air from the room, care is to be taken that these outlets be so placed in the floor that they shall not lie in any direct line between the fire and a door or window, for every current of cold air entering the room will rush by the shortest path to the fire, and will, therefore, not turn aside to enter a drain whose outlet does not lie in such path.

It is suggested by your correspondent that "the air for feeding the fire should be conveyed by pipes having their openings close to the ceiling;" but he will now see, from what I have said above, that this would be a mistake, for we should then be drawing off the purest air in the room, and leaving the worst unaided in its escape.

In the plan which the manufacturer will forward to Mr. Beattie, and a copy of which I enclose for your own inspection, the drain-outlets are not in the best position. They are as originally placed in the school-room of this parish; further consideration has shown me that they ought to be in opposite corners of the room, and in the extreme distance from the fire.

The experience of about ten years has so fully convinced me of the merits of the apparatus, that I cannot but rejoice to hear that "the system is getting into practice." The manufacturer is frequently applied to for stoves for fresh schools in localities where they have been for some time already in use. Surely this may be regarded as a satisfactory proof that they are not found to be inefficient in "practice," although the principle on which they are constructed may, at first sight, appear to be "wrong in theory."

W. WILLIAMS.

Vicarage, Hyde, Winchester.

THE TENDERS FOR MR. SPURGEON'S TABERNACLE.

ARCHITECTURAL COMPETITIONS.

SIR,—May I be permitted to call your attention to the list of tenders for the erection of the New Tabernacle for the Rev. C. H. Spurgeon (as reported in your journal of last week), which seems to me to expose the present fallacious principle and practice of architectural competition.

There were thirteen tenders, the highest of which was 26,370*l.* and the lowest 21,500*l.*

Taking the *lowest* of all the tenders, the figures stand thus:—

For the carcass	£13,000
„ finishing	7,000
Total, if executed in Bath stone,	20,000
Add, if in Portland stone	1,500
	£21,500

There is also the contract for the earthwork and drainage, which has to be added to this sum, the tender for which amounted to 593*l.* which makes the total cost for the building of the tabernacle 22,093*l.*

Nor is this all, for the conditions upon which architects were invited to compete, were as follows:—"The total cost, including architect's commission, measuring, warming, ventilation, lighting, boundary-walls, fences, paths, fittings, and every expense, to be about 16,000*l.*"

The architect's commission and clerk of the works' salary, &c. have therefore to be added to the cost of the building: these will, no doubt, amount to 1,550*l.* which will make the cost 23,643*l.* or say with extras 24,000*l.* or just "*half as much again*" as the prescribed amount.

Now, my object in writing this is to bring forward another proof that in making out designs for competition, architects do not restrict themselves to the conditions imposed upon them, either from *ignorance* of the cost of building, or from there being so many chances against their being the successful competitor, the question of cost is *lightly considered*, or perhaps only *guessed at*, by the majority, the main object being to design something attractive, which, if successful, must afterwards be pared down (if it can be pared down) to some lower amount than the estimated cost.

Such a system is greatly to be deprecated. It is unfair and unjust, both to those who invite architects to compete, and to those architects who

desire to compete fairly, and to make out a design which shall be executed at something approximating to the restricted amount. Nor can I help feeling but that the author of the *first premiated* design ought (as an act of justice) to be *now* called upon to furnish estimates for *his* design, seeing that the tenders for the *second premiated* design are so far in excess of the prescribed amount. JOHN BELCHER.

COMPETITIONS.

Maidstone.—The committee for building the New District Church of St. Paul, Maidstone, invited two local and two London architects to submit designs for their new church. The committee ultimately selected the design of Messrs. Peek and Stephens as the one most in accordance with their views, and awarded the sum of 30*l.* to the next best, and 20*l.* to each of the two other competitors. It is proposed, as soon as funds are obtained, to build a parsonage adjoining the church.

Independent College, Taunton.—Sir: I have to inform you of a new phase in competitions, originated by the Committee of the Taunton Independent College.

This committee issued instructions to architects stating that certain accommodation was required, and that no designs would be received which could not be executed for 4,000*l.* On examination it was clear to myself, as it must have been to every competent estimator, that no such accommodation could possibly be provided for that amount; but, supposing that this would be clear to themselves, and that the most feasible designs would be accepted, I did, after considerable labour, submit a design.

Now comes the point. The list which has been published, and which you refused to insert, wherein the authors of designs with certain mottoes are required to send addresses, to which such designs might be forwarded, "such designs not being adopted," would lead to the inference that other designs were adopted, though their mottoes were not given. I regret, however, to assure you that the published list contained the mottoes of *all the designs submitted*. And these are all set aside without the shadow of a reason being assigned.

If we are to suppose that excess of cost (*and nothing worse*) has led to this, then from whom but the competitors did the committee learn to estimate? And on this ground, if on no other, the premiums ought to have been awarded. COMPETITOR.

BUILDERS' BENEVOLENT INSTITUTION.

YESTERDAY (Thursday) the twelfth annual meeting of the subscribers and friends of this charity was held at the London Tavern, Bishopsgate-street, for the purpose of receiving the report for the past year; for the election of president, auditors, treasurer, and directors, for the year ensuing; and for other matters connected with the welfare of the institution. Mr. George Bird, treasurer, occupied the chair, owing to the absence of Mr. Thomas Piper, president, through a pressing and important engagement.

The minutes of the previous meeting having been read and confirmed,

The Secretary proceeded to read the report for the past year, as follows:—

"In appealing to the public for their continued aid and support, the directors consider that there is not amongst the numerous institutions for the relief of the necessitous one perhaps more deserving of support than that which has for its object the relief of those connected with the building interests, whom age and distress render utterly unable to assist themselves.

As has been before urged, the nature of building operations are, from the never-ceasing struggle of competitive energy and various causes, rendered perhaps more precarious than the pursuits of other classes, and which your directors conceive to be a strong claim upon the generosity of the wealthy, and those whose efforts have been crowned by success.

The directors take leave to advert to a subject explained in the last report, viz. the termination of the Guarantee Fund obtained at the dinner held in 1855, by which, at the close of the year 1860, the income of the institution will be reduced 120*l.* 15s. per annum. This contingency they are in part endeavouring to meet by not filling up all the vacancies occasioned by the decease of pensioners; and they do hope that, at the annual dinner in October next, the number of subscribers will be sufficiently augmented to prevent such a precautionary measure being necessary, and to make up for the deficiency. They assure their kind friends and supporters that the most pleasurable portion of their duties is an election of pensioners, and the greatest drawback their inability to elect more from want of sufficient funds.

The subscriptions and donations for the past twelve months amount to 1,035*l.* 0s. 6d.; and the Trustees have purchased 583*l.* 7s. 2d. Stock, Three per cent. Consols—457*l.* 19s. 1d. for the Relief Fund, and 125*l.* 8s. 1d. for the Building Fund. The total sum now invested is 6,683*l.* 7s. 2d. Stock, being 4,557*l.* 19s. 1d. for the Relief Fund, and 2,125*l.* 18s. 1d. for the Building Fund, with a balance at the banker's of 218*l.* 14s. 6d.

The directors have the satisfaction of informing the subscribers and donors, that the acting trustee, Mr. G. Spencer Smith, has succeeded in obtaining from the Commissioners of Inland Revenue all the sums, amounting to 49*l.* 5s. 2d., which had been previously deducted from the dividends on the Stock invested in the Three per cent. Consols, which they gratefully attribute to the energy and perseverance of that gentleman.

The following pensioners have died during the past year:—Robert King, elected November, 1849, died May, 1859; Joseph Martin, elected May, 1859, died June, 1859; Ann Fagan, elected August, 1853, died March, 1859; Phœbe Paxton, elected November, 1855, died June, 1859.

An election of two pensioners—one male and one female—was held at the London Tavern, in May last.

The eleventh annual ball, which took place at Willis's Rooms, St. James's, as usual, kindly superintended by the honorary secretary, Mr. Joseph Bird, produced the satisfactory profit of 98*l.* 14s. 6d. and donations amounting to 2*l.* 1s. making together a total of 100*l.* 15s. 6d.

When we take into consideration the amount of wealth and intelligence which characterises the trades for the relief of the decayed members of which the institution was established, the directors still hope and expect that ere long it will be one of the most numerous and flourishing in the metropolis, and that all those connected with the building interest who have not yet contributed their support will now, when it is so much needed, come forward and assist in alleviating the distress of their less fortunate brethren.

In conclusion, the president, vice-presidents, and the directors feel assured the objects of this institution have only to be better known, and it will be more liberally supported. They therefore anxiously solicit the co-operation of all charitably-disposed persons to increase the funds, and thereby extend its benefits.

Mr. George Smith, of Pimlico, has kindly consented to become the president of the Institution for the ensuing year."

The balance-sheet from June, 1858, to June, 1859, showed the receipts to have been 1,911*l.* 1s. 7d. and, after the payment of all expenses, leaving a balance of cash in banker's hands of 218*l.* 14s. 6d. and in the hands of the Brighton secretary, 4*l.* 12s. 8d. making the entire balance 223*l.* 7s. 2d.

The report having been unanimously received,

The Chairman in reference to the balance-sheet, said he exceedingly regretted the figures were below the receipts of the previous year, except at the ball. He was afraid that, instead of progressing, they were receding; but he hoped the ensuing year would be better than the last.

Mr. J. Thorn said the building trade was not so prosperous. The diminution, however, was not very great; and, under all circumstances, they ought to congratulate themselves on their receipts being nearly as good as might be expected.

Mr. Cozens (the founder of the institution) begged to call the attention of the meeting to the fact of the loss which they would sustain, in 1860, by the Guarantee Fund, and urged upon them the necessity of taking time by the forelock. He was particularly desirous to provide for those who could not assist themselves. There were now fourteen waiting to be elected, yet he was afraid they would be unable to have another election in November. It therefore behoved all to assist in realizing a small amount.

The various officers were then elected; and after several complimentary votes and acknowledgments the meeting separated.

BUILDERS AND MERCHANTS' ACTIONS.

BINGHAM V. JONES.

THIS action, at the Brompton County Court, was brought by Mr. Bingham, a marble and stone mason, of Amelia-place, Fulham-road, Brompton, to recover 25*l.* 18s. of the defendant, a builder, of Richmond. Mr. W. B. Davies appeared for the plaintiff, and Mr. George Keene for the defendant.

From the evidence on the part of the plaintiff, it seemed that the defendant had a contract to complete several carcasses of houses in St. Margaret's-terrace, Richmond, and to this end the defendant contracted with the plaintiff to supply the chimneypieces and cisterns, and furnished sixteen Sicilian marble mantelpieces at 2*l.* and the stone cisterns for 4*l.* 18s. the amount now claimed.

Mr. Keene having elicited that there was a written contract, and that the document did not bear a stamp, contended that the plaintiff had put himself out of the pale of the law, through omitting to have the contract stamped; and cited several law reports and decisions in support of his objection.

Mr. Davies, on the other hand, argued that as part of the goods supplied came under mercantile dealing, no stamp was necessary, for if such were the case, a brickmaker, supplying a thousand of bricks, or a stone merchant a ton of granite, would be compelled to run to the Stamp Office for a stamp whenever he did not get ready money for his goods.

The Judge was of opinion that the contract did not require a stamp; upon which Mr. Keene elicited from the plaintiff that the defendant had sent a letter respecting the chimneypieces not being of a certain size; and Mr. Bingham denied that he had agreed to supply the marbles at the sizes mentioned in a letter inquiring the prices, &c. The witness admitted that four of the mantlepieces were not up to the contract, but that he had offered to fetch them from Richmond, and supply others to the satisfaction of the defendant, but this offer had been refused.

Mr. Davies said it was only when payment was demanded that the defendant made his objections, he having up to that time said the mantlepieces and cisterns would do.

The Judge (Adolphus) gave a verdict for 21*l.* 18s. deducting 4*l.* for the mantlepieces complained of. Upon inquiry as to Mr. Bingham's right to have the goods condemned returned to him, it transpired that Mr. Jones, having completed his contract, had no further control over the plaintiff's goods, which were put up in the houses, neither could he remove the mantlepieces.

The Judge upon this, to the astonishment of all in court, the defendant apparently not excepted, altered the verdict to another for 10*l.* thus leaving the plaintiff without goods, money, or after redress.

Upon what grounds the Court so acted no one present could understand.

Books Received.

Fifth Annual Report of the London Diocesan Church Building Society and Metropolis Churches Fund. 1859.

THE committee of this society report a much more satisfactory state of affairs during the last year than in the previous one. Eleven churches had been consecrated and many designs for further church extension had been begun, or were under consideration. The committee regretted, however, to state that the receipts of the last year for general purposes (after deducting from those of the preceding year, the 10,000*l.* voted from the crown land revenue), had been 900*l.* less than those announced in the last report. They trusted this decrease would only be temporary. The committee express their satisfaction in being able to state that the owners of building land are shown an increasing disposition to afford facilities for the acquisition of sites for churches in the midst of incoming populations.

Exercises in Mensuration, with their Solutions. By FREDERICK CALDER, M.A. Longmans and Co. 1859.

MR. CALDER is the author of "A Familiar Explanation of Arithmetic," of which we have already had occasion to speak in commendatory terms; and the present little volume appears to be one possessed of similar merit, and forming, what it professes to be, a key to all the exercises in the third part of "Lund's Geometry and Mensuration."

VARIORUM.

THE *Freemasons' Magazine and Masonic Mirror* has assumed a new and enlarged form. The first number of the new (quarto) series was published on the 9th of July. One advantage among others from the change is, that it can now be sent abroad by post for newspaper postage (1d.). The Magazine will not be confined purely to Masonic subjects, but architecture, archæology, and other sciences will receive attention, as will the proceedings of scientific bodies, the news, &c. and it will be illustrated by engravings. The number before us contains an interesting paper on Stained Glass, read before the Birmingham Architectural Society in March last, and a large quantity of Masonic and other intelligence.——No. 17, of the second volume of the *Geologist* (Simpkin, Marshall, and Co.), shows that this new periodical is getting on. The number in question contains, amongst various other matter, an interesting article, by Mr. S. J. Mackie, with plates and woodcuts, on ripple-marks, rain-marks, sun-cracks, and even wind-marks, &c. in the oldest stratified rocks, and another by Dr. G. D. Gibb, on what he calls "Fossil Lightning," that is on branching tubes and stalks of flint, forking into sands and sandstones, and pavement flags, and produced at some more or less ancient time by the action of lightning.

FALL OF A ROOF AT WILLENHALL.—The roof of the house at New Junction, fell in recently while the occupants were in bed, or rather, it "fell off," for, dividing in the middle, one part slipped down on one side, and the other upon the other side, only a very small portion falling in the interior. No one was hurt.

Miscellanea.

NORTHERN ARCHITECTURAL ASSOCIATION.—The ordinary quarterly meeting of the Northern Architectural Association was held on the 19th inst. in the rooms of the Society of Antiquaries, in the Old Castle, Newcastle, Mr. Thos. Austin in the chair. The secretary (Mr. Oliver) having read the minutes of the last meeting, and a large amount of preliminary business having been disposed of, gentlemen were elected in connection with the Association. A special meeting was afterwards arranged to be held, to hear a paper read by Mr. Austin, on the "English Architecture of the Twelfth Century." The annual excursion meeting of this society was held at Finchale Abbey and Lumley Castle, on the 6th inst.

THE LATE SMITHFIELD MARKET.—In the Commons last week, Mr. K. Seymer asked the Home Secretary whether it was the intention of Government to adopt so much of the site of Smithfield-market as reverted to the Crown for the enjoyment and recreation of the public. Sir G. C. Lewis said a plan was in preparation by the City according to which a considerable portion of the ground would be dedicated to the use of the public for recreation and enjoyment. The plan in question involved a portion of the ground belonging to the City, and also a small portion of the site belonging to the Crown, which would be used as a dead-meat market.

CHARING-CROSS AND SOUTH-EASTERN RAILWAY BILL.—A proposition was made by the promoters of this bill to give the trustees of St. Thomas's Hospital 10,000*l.* to build a new wing in place of the one to be rendered unfit for hospital purposes, by the railway contiguous to it, but this was declined. The chairman said the committee considered that the hospital would be damaged by the new line, that it would render the north wing totally unfit for the purposes of a hospital, and that it ought to be removed. They considered that the London-bridge Railway Companies should have entered into some arrangement for the purchase of the hospital, but they must leave the question of compensation to be settled by the parties as the law provided. The clauses were gone through, and the bill was ordered to be reported to the House.

ELECTRO-TELEGRAPHIC.—The Folkestone and Boulogne telegraph, now laid, is submerged at Boulogne, thence traverses the depth of the Channel, and emerges at low-water mark opposite Lydden Spout station. From this it passes under the beach to the zig-zag footpath, ascending the cliff to the station, and is thence carried on by an underground wire to an office in Folkestone, near the pier lately occupied by Messrs. Chinnery. It is connected with Dover by means of a wire, from its junction at Lydden Spout to the company's office, passing at a considerable height above houses from Archcliff Fort. The cable weighs 6 tons to the mile.——Gold medals have been prepared for the New York Chamber of Commerce, to be presented "to those engaged in laying the first Atlantic cable." The medals are of two sizes, nine of the first-class, and forty-eight of the second. The first are for the projectors, and the active promoters of the work. The second are for those who were principally engaged in the laying of the cable. It is somewhat amusing to note that neither the engineer (Bright), who was knighted by her Majesty, nor the electrician (Whitehouse), are included either in the first or second class, though both of them had assuredly something more to do with the original promotion of the cable than most of the Americans and others to whom the first-class medal is to be given, while even second assistant engineers in the British men-of-war, and *third* assistant engineers in the States men-of-war are on the list for the second-class medal. The commanders of these vessels receive the first-class medal.

GRANITE TRAMWAYS.—I read with pleasure the letter of your correspondent, "Mr. D. F. Walker," in your last number, in reference to tramways. I have also observed with him the pavement in Friday-street, Cheapside, and lamented that the material required should lie useless in the possession of the heir to the Crown. There is enough granite to supply the seabord of the whole nation, at least, at Dartmoor, that might be wrought into blocks by convict labour, and shipped at Plymouth at small comparative expense by tram or railway, as there is one continual declivity from Dartmoor to Plymouth, a distance of less than twenty miles. Any further information I should be glad to give, if desired.

PLYMOUTH.

"SOUTH KENSINGTON MUSEUM."—During the week ending 23rd July, 1859, the visitors have been 5,654 in number; from the opening of the Museum, 987,922. At the Museum of Patents the number of visitors for the week has been 1,715.

THE NATIONAL GALLERY.—In the House of Commons, last week, Mr. Coningham moved that it is the opinion of the House that the system of management which now exists at the National Gallery is highly unsatisfactory, and is detrimental to the public service. He said that during the last twelve years upwards of 90,000*l.* had been expended in augmenting the National Gallery, and appealed to any one who had a knowledge of pictures whether, since the advent of its present administration to office, the exhibition had not positively deteriorated. He contended that the system of management was bad, and therefore he hoped that the House would interfere and put a stop to it. Hon. gentleman might show impatience (there had been sundry manifestations of that feeling all through the hon. gentleman's speech), but he could assure them that the country looked at the result of this question with very great anxiety. They looked upon the way in which the Government had dealt with this question as a test of their sincerity in the work of reform and retrenchment. He concluded by moving the resolution; but there being no seconder, it fell to the ground.

THE REPAVEMENT OF LONDON-BRIDGE.—On Monday last this work was finished by Messrs. Mowlem, Burt, and Freeman, of Grosvenor-wharf and East Greenwich, who have undertaken the remainder of the carriage-way contract for paving, since the demise of Mr. James Chadwick. Twelve days have been occupied in its completion, during which time 5,000 tons of material have been removed, and as much new granite, in 3-inch Aberdeen and Guernsey cubes, with massive trams and worked kerbs, of the best quality, direct from the quarries of the firm, have been laid. Some difficulty was experienced in consequence of it having been decided that half of the bridge only should be paved at once, leaving the other half as a margin for the traffic. Mr. C. Cave was clerk of the works, and Messrs. Murray and Webb were the foremen.

BALLOONING: PREPARATIONS FOR A TRANSATLANTIC VOYAGE.—A trip from St. Louis to the sea-bord, previous to an attempt which appears to have been seriously entertained of crossing the Atlantic, is thus described in an American paper:—"Friday evening, at twenty minutes past seven, the balloon Atalantis left St. Louis for a trip to the sea-bord: Messrs. Wise, La Montaine, Gager, and Mr. Hyde, of the *Republican*, were the passengers. The balloon landed near Adams, Saturday afternoon, having travelled 1,200 miles in nineteen hours. The balloon travelled over the whole of Lake Erie, from Toledo, across Long Point—passing between Buffalo and Niagara Falls. Just before reaching Rochester, the balloon encountered a violent hurricane, which swept it from its course and carried the voyagers over Lake Ontario. It was their intention to have followed the Central Railroad, as near as possible to Albany, and but for the storm of Saturday they would have been successful." The balloon was dragged for fifty miles across Lake Ontario, and almost in the water all the time. It was afterwards destroyed in a forest. The highest point attained during the voyage was a little over two miles. The balloon was charged with 75,000 feet of gas at starting. This balloon was the one constructed at Lansingburg, for a voyage across the Atlantic. The aeronauts are said to be "well satisfied with their trip, and confident that aerial navigation for great distances is entirely practicable." The trip cost M. Gager alone some 2,000 dollars. The "Atalantis," it is to be feared, runs the risk of disappearing in the ocean like Plato's Island of the same (in this case) not very auspicious name. To travel 1,200 miles in a balloon, however, is at least a step in advance, and nineteen hours shows what may yet be done, were there only means of guidance available. The projectors in this case feel assured of a west to east air current at a certain height in the atmosphere to waft them safely across the Atlantic.——For the raising of balloons, we may here note, a correspondent of our own, Mr. C. M. Dick, senr. proposes heat from coal ignited on a fire-tile furnace, such as recently described in the *Builder*; and the balloon he proposes to be of silk made impervious to air or gas by vulcanized india-rubber, the texture being similar to that of light waterproof silk top-coats and cloaks. The caoutchouc, he says, will withstand over 200 degrees of dry heat.

ROMAN REMAINS AT WITCOMBE.—A Roman villa has been discovered at Witcombe, near Bath. It is situated on the estate of Lady Cromie, and consists of tesselated pavement in various devices, and several baths are attached to the building, the largest of the kind that are known. It was discovered by some labourers while in the act of rooting up an old ash tree, which disclosed a doorway leading into the villa. In the interior were found hatchets of flint, ploughshares, steelyards, lamps, coins, and various other Roman relics, the whole of which are to be preserved in the British Museum.

DOCK PROPERTY.—The St. Katherine's Dock Company has just announced a dividend for the last half-year of 4½ per cent. free of income tax. The tonnage which entered the dock in the first six months of the last three years, was as follows:—1857, 93,781 tons; 1858, 93,636 tons; 1859, 97,962 tons. The total shipping which entered the port of London in the half-years ended 30th June, 1857, 1858, and 1859, respectively, was as follows:—1857, 4,378 ships, of 1,116,850 tons; 1858, 4,899 ships, of 1,295,840 tons; and 1859, 4,639 ships of 1,195,240 tons.

THE STEPHENSON MONUMENT, BY MR. LOUGH.—We understand that the monument consists of a bronze figure of 10 feet high, upon a gradually decreasing quadrilateral base springing off a square area. The height of the supporting mass will be 15 feet. The figures of four athletic workmen, modelled from the life, fill up each corner of the area, and they each are typical. First, a forge worker, a common blacksmith, with his implements of trade, on whose labour all the grand works of the mighty engineer were based; a second bearing a sample of the smooth rail; a third with the locomotive engine; and a fourth with the safety lamp, or, as the miners call it, "Geordy."

DEODORIZING THE THAMES.—Dr. McGregor Croft proposes to turn the river steamers to account. He says, "The liquor *sodæ chlorinatæ* is well known as a powerful deodorizer; and I propose that these vessels carry a zinc tank, capable of holding a hogshead of this liquid, and a pipe from the tank should empty the contents (regulated of course) beneath the sterns. The constant evolution of the paddle-wheels would effectually mix the fluid with the sewage. I need not remark how thoroughly the object would be gained without detriment to any property, and I may be considered bold in asserting (nevertheless it is true) I could remove in forty-eight hours by this process all stench from the river; and it can be easily repeated."

FRAUDS IN THE SALE OF GAS.—The value of gas sold in this kingdon is estimated to amount to 5,000,000*l.* per annum; and yet its measurement is left without any legal provision with respect either to accuracy or fraud. For the want of a legal criterion and inspection, what is called a cubic foot of gas measured by meters of one manufacturer, differs as much as 3 per cent. from the cubic foot as measured by the meter of other manufacturers. Gas meters are capable of being managed so as to register for or against the consumer to a very important extent, in many instances varying from the true measure as high as 25 to 50 per cent. or upwards; and instances, it is said, have been found of meters actually at work registering as high as 30 per cent. variation from the true measure! The gas-consuming public have therefore at present no remedy against fraud or error in the measurement of gas, but must submit to every imposition; but if a proper legal standard of measurement were established, and inspectors appointed to enforce its observance, there would soon be an end of this long-standing evil.

SUNSTROKE.—It may not be amiss to remind your readers, that in Eastern and tropical climates the practice is to protect the head, particularly the back of the head, from the sun by a heavy turban, or by a solar tope or planter's hat, consisting of many plaits of straw lined with white all over—a massive affair. The practice here seems reversed, by either wearing a light cap or a light straw hat—no protection at all, or a degree better only than the senseless Turkish fez, which produces the ophthalmia so prevalent—not protecting the eyes. A word on modern dress,—a subject to which you have more than once alluded. This requires to be easier, lighter, and more flowing. The present condition of dress as regards the female part of the community is such as to reduce them to a comparative state of helplessness,—destructive alike of comfort and of health. Labourers in the field using a stooping posture should wear the "planter's hat," to protect head and neck.—COMFORT.

REPEAL OF THE PAPER TAX.—In No. 27 of the Gazette of the Association for Promoting the Repeal of the Taxes on Knowledge (published at their office, 10, Ampton-place, Gray's-inn-road), is a copy of the recent petition to the Commons, on the subject of the obnoxious paper tax, in which some of its inconsistencies and absurdities are pointed out. The number also contains an extract from the third annual report of the board of inland revenue on the paper duty, in regard to anomalies and difficulties as seen from an excise point of view.

ROCK DRILLING MACHINERY.—A contrivance has just been patented in the United States by Mr. L. White, of Davenport, Iowa, for rendering the drilling of rocks less laborious than it has hitherto been. The operation is said to be very simple. By turning a crank the drill receives a rapid percussive and return motion, giving three blows to one rotation of the crank, and at the same time the drill is fed to its work, and itself turned to cut the hole round. A two-inch bore and under can be done by hand, and it is only above that size that animal or steam-power will be required.

RECENT THUNDERSTORMS.—Electricity has been very active throughout the country this summer, and, notwithstanding the great heat, there is, doubtless, little chance of the prevalence of epidemic cholera, which appears to be much more connected with close summers, in which there has been but little of the salutary influence of lightning to purify air and earth. But for the recent thunderstorms, bad as the Thames is, probably it would have been still more offensive; since the electrified oxygen or ozone of the atmosphere is a much more potent decomposer of noxious effluvia than oxygen not so electrified or made chemically active. Much mechanical mischief, however, has been done by the thunderstorms throughout the country, especially in the shape of glass breakage. Hail, or rather lumps of ice, some of it as large as a hen's egg or a small orange, is said to have been very prevalent, even injuring and killing small animals, such as rabbits, fowls, geese, &c. and even the rain is said in some cases to have come down with such impetuosity as to break skylights, as well as deluge buildings, slake lime and hence set fire to wooden structures, &c. In Yorkshire and Lancashire, as in many other districts, much damage was done by both hail and rain, and some little also by the lightning.

DWELLINGS FOR LABOURING CLASSES (IRELAND).—A Bill to extend the Act to Facilitate the Improvement of the Landed Property in Ireland, and the Acts amending the same; and to promote the Erection of Dwellings for the Labouring Classes in Ireland, has been prepared and brought in by Sir William Somerville, Mr. George, and Sir R. Fergusson. The preamble recites: "Whereas an Act was passed in the tenth year of her Majesty, intituled 'An Act to facilitate the Improvement of Landed Property in Ireland:' And whereas an Act of the twelfth and thirteenth years of her Majesty, chapter twenty-three, was passed 'to authorise further Advances of Money for the Improvement of Landed Property and the extension and promotion of Drainage and other works of public utility in Ireland:' And whereas another Act of the thirteenth and fourteenth years of her Majesty, chapter thirty-one, was passed 'to authorise further Advances of Money for Drainage and the Improvement of Landed Property in the United Kingdom, and to amend the Acts relating to such Advances:' And whereas, under the eighth section of the said last-recited Act, loans were authorised to be made for the erection of farm-buildings in Ireland; and it is expedient to authorise loans to be made in like manner for the erection of dwellings for the labouring classes in Ireland: Be it," &c. Loans may be made out of the money granted for the improvement of landed property in Ireland for the erection of dwellings for the labouring classes in Ireland.

TENDERS.

For the erection of an entire new set of farm buildings, at Woodend Farm, Huntley, near Gloucester. Messrs. J. and J. Girdwood, architects, London:—

R. Smith, Dickleburgh	£2,324 0 0
Collier and Smart, Gloucester	1,920 0 0
J. Coleman, Chaxhill (accepted)	1,885 0 0

For the erection of cemetery chapels, in the parish of Banbury and county of Oxford. Mr. C. H. Edwards, architect. Quantities supplied by Messrs. G. and C. Lansdowne:—

H. Cowley	£1,128 8 0
J. and T. Davids	1,125 0 0
C. Claridge	1,070 0 0
Hopkins and Hackett	1,049 0 0
A. Kimberley	939 0 0
T. and S. Orchard (accepted)	927 0 0

For sundry works to be done at the "Morning Advertiser" office and houses, in Shoe-lane, City. Mr. W. Nunn, architect. Quantities supplied:—

Jones and Martin	£2,500 0 0
Lawrence and Sons	2,240 0 0
Mansfield and Son	2,050 0 0
Little and Son	1,987 0 0
Blackburn	1,978 0 0
Brass and Son	1,955 0 0
S. B. Hocken	1,910 0 0
Norris	1,897 0 0
Ashford and Co.	1,895 0 0
Livermore	1,890 0 0
Hack and Sons	1,877 0 0
Wilson	1,854 0 0
Chutter	1,844 0 0
Jones	1,795 0 0
Rider	1,674 0 0
Wills	1,584 0 0

For five lodges, and chapel altered to form two cottages, Bedwell, Herts, for Sir Culling E. Eardley, Bart. Mr. W. G. Habershon, architect:—

Rudkin, Brothers	£3,245 0 0
Lodd, Brothers	2,828 0 0
Andrews	2,672 0 0
Tarrant	2,310 0 0
McLennan and Bird	2,269 0 0
Purkiss	2,189 0 0
Simpson	2,150 0 0
Seagrave and Blofield	1,956 0 0
Collins	1,950 0 0
Evans, Brothers	1,895 0 0
Rowland	1,875 0 0

For boundary walls, gates, &c. at the Diocesan Training Schools, Brighton. Mr. W. G. Habershon, architect:—

McCalla	£1,050 0 0
Jackson and Shaw	610 0 0
Cheesman and Co.	600 0 0
Seagrave and Blofield	544 0 0
Cane	520 0 0

For erecting fences and laying out gardens, &c. to six houses at Forest-hill, Kent, for Mr. H. B. Turnbull. Mr. W. Hey, architect:—

Shoults	£408 5 0
Downs	384 0 0
Plumley (accepted)	289 0 0

For road-making, sewerage, and allotment drainage of Conservative Land Society's estate, Melcombe Regis parish, Weymouth, Dorset. Mr. James Wylson, Engineer. Quantities not supplied:—

	Embankments, Earth; 8 inches of Gravel on Roads.	Embankments, Earth; 4 in. of Chalk, and 5 Gravel.	Embankments, Chalk; 5 in. of Gravel.
	£ s. d.	£ s. d.	£
Pickering	6,628 1 5	.. ..	...
Rogers	6,475 0 0	6,265 0 0	9,000
Cox and Harcourt	6,271 0 0	....	7,271
Testy	6,230 10 0	6,490 10 0	7,330
Murray	....	5,811 0 0	7,920
Bottomley and Hanson	5,201 11 11	4,954 1 11	..
Edsall	5,044 10 0	5,024* 0 0	5,904
Pickett	5,119 0 0	5,216 0 0	..
Rentmore	4,921 0 0	4,921 0 0	7,921

* 3 inches of Chalk.

TO CORRESPONDENTS.

SOMEBODY (The painter's bill at Cirencester, said to have been delivered to the churchwardens of an adjoining parish in 1771, viz.,—"To mending the Commandments, altering the Belief, and making a new Lord's Prayer, one pound one," has been often printed).—E. C. P.—Alpha—E. O. S.—D.—S.—H. C.—Mr. O.—F. W. B.—W. H. (next week).—A Bricklayer—A Foreman—H. J.—J. P.—D. F. W. (declined with thanks).—J. F.

Post-office Orders and Remittances should be made payable to Mr. Morris R. Coleman.

☞ *NOTICE.—All Communications respecting Advertisements, Subscriptions, &c. should be addressed to "The Publisher of the Builder," No. 1, York-street, Covent-garden. All other Communications should be addressed to the "Editor," and* NOT *to the "Publisher."*

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Guildhall, Dorchester, 11th July, 1859.

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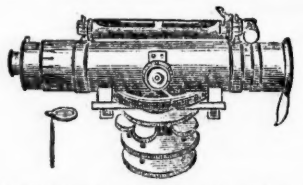

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